

Fire performance, beauty and
durability for interior residential
and commercial spaces



Plaster

Systems

SA-920

Plaster systems offer a number of practical and aesthetic advantages over gypsum panels and other interior finishes.

Plaster permits a great deal of design flexibility, combined with fire performance, strength and durability. These factors improve lifecycle economy when compared to drywall.

Because plaster systems are truly monolithic, they provide surfaces that minimize or eliminate irregularities associated with standard drywall construction (ridging, boarding, nail pops, etc.).



Beauty and Strength

User's Guide

This brochure explains:

- The components of a plaster system
- The difference between conventional plaster systems and one- or two-coat veneer plaster systems
- The attributes of conventional and veneer plaster systems

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Overview

Plaster systems provide improved fire and abuse resistance over conventional drywall systems. In addition, they allow for a variety of aesthetic applications and better acoustic performance.

Depending on the application, either conventional or veneer plaster systems can be used. Conventional plaster systems use a thicker plaster coat over a metal lath and provide increased fire and wear resistance, while one- or two-coat veneer systems are faster and less expensive to apply.

Plaster systems typically consist of a substrate, a basecoat plaster and a finish plaster.

Substrates

Substrates can be either metal lath, unit masonry, monolithic concrete, or a recommended gypsum base, cement board or fibre-reinforced gypsum panel.

Basecoat Plasters

Basecoat plasters provide strength and rigidity, compensating for substrate imperfections and resulting in even, straight walls and ceilings. In conventional plaster systems, basecoat plasters are generally applied 13 to 25 mm (1/2" to 1") thick, in one or two separate applications, depending on the substrate. In veneer plaster systems, basecoat plasters are applied approximately 1.5 mm (1/16") thick.

Basecoat plasters are supplied in two forms: mill aggregated (which requires only mixing with water), and neat (which requires the addition of aggregate at the job site).

Finish Plasters

In conventional plaster systems, finish plasters are applied to properly prepared gypsum basecoat plasters to form the wearing surface of walls and ceilings. In veneer finish applications, finish plasters can be applied to any properly prepared basecoat or directly to a gypsum base. Finishes are approximately 1.5 to 2.4 mm (1/16" to 3/32") thick, and can be smooth troweled, floated or textured.

Finish plasters are supplied in two forms: factory-prepared finishes require only the addition of water, while gauging plasters require the addition of lime putty.

Fire Resistance

All ULC and UL assemblies listed in this folder are certified for use in Canada and comply with CAN/ULC S101 for fire resistance. The Standards Council of Canada recognizes ULC and UL as accredited testing and certification organizations for certification of materials and systems to Canadian standards.

Loading Conditions

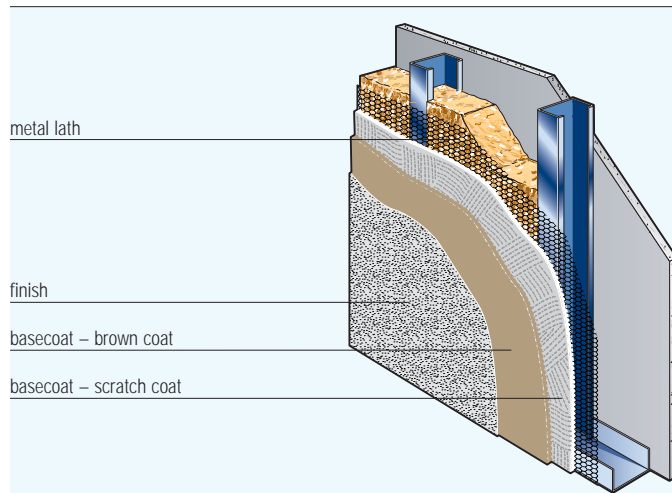
All load bearing assemblies, with exception of steel columns, are required to be loaded to their full design capacity during tests for fire resistance as required in CAN/ULC S101 and ASTM E119. The 2005 edition of the National Building Code of Canada now references the Third Edition of CAN/ULC S101-04 that requires applied loads be calculated under Limit States design principles. The previous edition referenced in the 1995 National Building Code of Canada permitted the use of Working Stress or Limit States principles for calculation of applied loads. In some cases there may be a significant difference between these calculations of applied loads. In these cases ULC and UL are amending their on-line and subsequent printed directories to provide guidance in the "Guide Information" section and notating individual designs that may require investigation as to "Load Restriction" or "Reduction" of the design. **This applies to both ULC and UL designs as well as assemblies certified by other Standards Council of Canada recognized agencies such as Intertek (Warnock-Hersey International)**

**Conventional
Plaster Systems**

Three-Coat

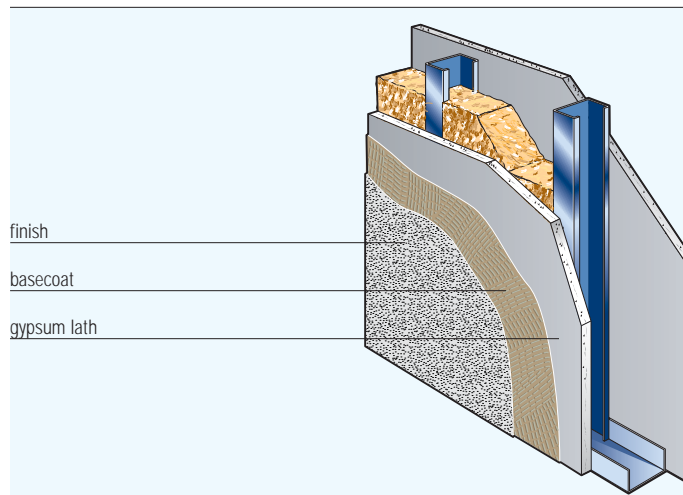
Conventional plaster systems are the best choice to attain a uniform, monolithic, blemish-free, smooth surface with good to excellent wear resistance based on the type of finish plaster. These systems make intricate architectural details and ornamental shapes possible. Conventional plaster systems offer excellent acoustical performance, proven fire resistance, increased abuse resistance, design flexibility for curves and compound surfaces, and lifecycle cost reduction due to lower maintenance costs.

A three-coat conventional plaster system consists of a thicker plaster coat (from 16 to 25 mm (5/8" to 1")) over a substrate, two base coats (a scratch coat and a brown coat) and a finish plaster.



Two-Coat

A two-coat conventional plaster system uses RockLATH Plaster Base instead of metal lath, one thickness of basecoat plaster, and a finish that replaces the scratch coat and brown coat.



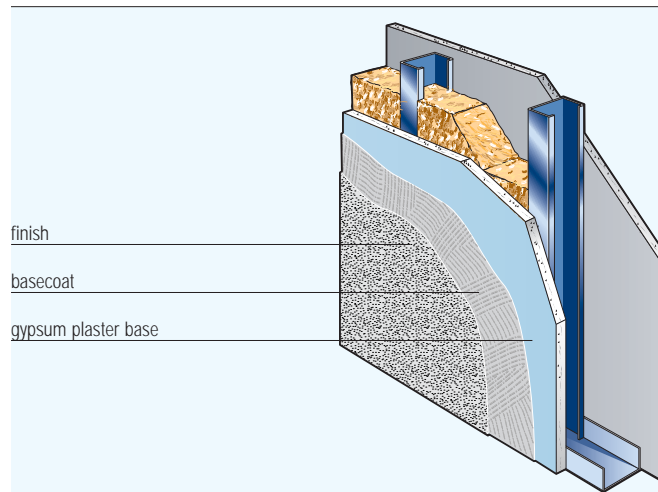
Overview

Veneer Plaster Systems

Two-Coat

While less expensive than conventional plaster systems, two-coat veneer plaster systems provide distinct advantages over single-coat veneer plaster and drywall systems, including a more monolithic surface with improved appearance under oblique lighting conditions. Two-coat veneer plaster systems allow truer wall surfaces and greater resistance to nail pops, joint ridging and joint shadowing/banding, with a wider choice of finishing materials and texture options.

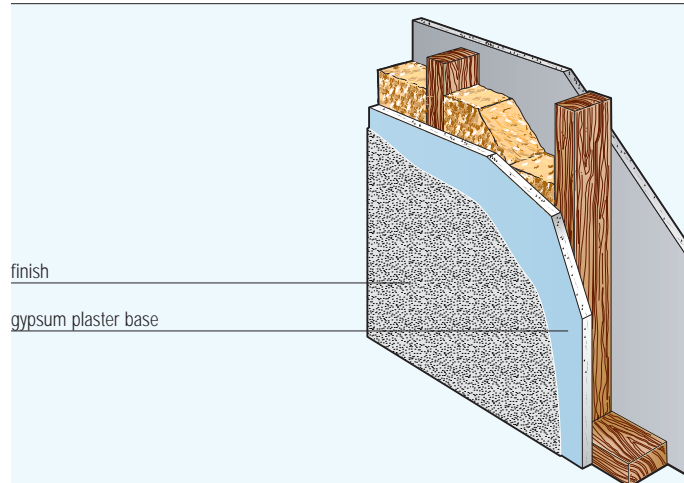
Two-coat veneer plaster systems use a finish plaster on top of a basecoat plaster.



One-Coat

One-coat veneer plaster systems provide a monolithic, smooth or textured appearance with moderate to superior surface hardness, depending on the product used. One-coat veneer plaster systems can be applied directly to the plaster base and can be ready for further decoration in as little as 24 hours if completely dry. Fast completion can often shorten construction time, making the single-coat veneer plaster system a very economical upgrade from standard gypsum drywall.

One-coat veneer plaster systems use one coat of 1.5 to 2.4 mm (1/16" to 3/32") finish plaster directly on top of a base, without the use of a basecoat.



Applications

Conventional Plaster Systems

Conventional plaster systems provide the highest quality finish and the capability to create complex high-end surfaces such as barrel vaults and domes. In addition, secured storage areas for homes, bank vaults, furriers, jewelers, correctional facilities, and embassies can be built with STRUCTOCORE™ Security Wall Systems.

Wood Framed

For wood-framed construction, a conventional plaster system provides:

- Fire resistance
- Improved acoustical separation between rooms

Steel Framed

For steel-framed construction, a conventional plaster system provides:

- Fire protection for beams and columns
- Durability and reduced lifecycle costs in high-usage applications
- Improved performance for acoustical applications such as concert halls and theaters

Veneer Plaster Systems

Wood Framed

For wood-framed construction, a veneer plaster system provides:

- Durability, including abrasion and crack resistance, for high-traffic areas
- 1-hour and 2-hour fire resistance ratings, depending on components used
- Sound control up to 52 STC with the use of resilient channels and sound insulation
- Easy application and fast drying for surfaces that are ready for next-day decorating or painting

Steel Framed

For steel-framed construction, a veneer plaster system provides:

- Fire-resistance ratings up to 4 hours
- Up to 21 MPa (3000 psi) for the ultimate in finish plaster resistance to abrasion, scratching and indentation in high-traffic areas
- Sound isolation up to 62 STC
- Versatility for most dimensions or modules in virtually all buildings, with excellent workability
- Lighter weight than masonry assemblies of the same thickness
- Simple, inexpensive components that can be installed quickly at a lower cost than conventional plaster systems

Special Applications

The CGC Drywall Suspension System is a low-cost alternative to cold-rolled channel for framing custom details such as barrel vaults and domes. It features:

- Pre-fabricated hub and pre-formed curved tees
- Suitable framing system for both conventional and veneer plaster systems




For more information, see AC3152, *Drywall Suspension System*.

Components

Substitutions of any of the components are not recommended or supported by CGC. Refer to the appropriate product material safety data sheet for complete health and safety information.

Substrates

Selector	Conventional	Veneer
Metal Lath	•	
DUROCK Cement Board (CGC Plaster Bonder)	•	•
FIBEROCK Interior AQUA-TOUGH Panels (CGC Plaster Bonder)	•	•
GRAND PRIX Gypsum Base (CGC Plaster Bonder)	•	•
Monolithic Concrete	•	•
Unit Masonry	•	•

Metal Lath	Diamond Metal Lath	Flat Riblath	10 mm (3/8") Riblath
Uses	All-purpose; best type for ornamental and contour plastering; exterior stucco, column fireproofing, direct-to-steel framing (with STRUCTO-BASE Gypsum Plaster) and replastering; attached to wood or steel framing or wire-tied to cold-rolled channel	Excellent for nail-on or tie-on work on flat ceilings because of its rigidity	Very rigid lath for framing spaced up to 610 mm (24") o.c., for studless, 50 mm (2") solid plaster partitions, or as a centering for concrete floor or roof slabs
Pattern	Small diamond mesh 	Flat rib with smaller mesh openings 	Herringbone 
Benefits	Small-diamond mesh size (11,000 meshes per sq. yd.) reduces plaster droppings; basecoat plaster forced through mesh openings forms strong mechanical bond with lath	—	Superior rigidity from 10 mm (3/8") main V-ribs at 114 mm (4-1/2") intervals, plus inverted 5 mm (3/16") intermediate ribs, reinforcing a strong, herringbone pattern mesh
Limitations		Not for contour plastering	Not for contour plastering; minimum ground thickness is 25 mm (1")
Coatings	Painted or galvanized	Painted or galvanized	Painted or galvanized
Sizes, Weights and Types	686 x 2438 mm (27" x 96"); 1.34 kg/m ² (2.5 lbs./sq. yd.) and 1.82 kg/m ² (3.4 lbs./sq. yd.); regular, self-furring or paper-backed (self-furring type is "dimpled" with 6 mm (1/4") indentations)	686 x 2438 mm (27" x 96"); 1.34 kg/m ² (2.5 lb./sq. yd.) and 1.82 kg/m ² (3.4 lb./sq. yd.)	686 x 2438 mm (27" x 96") (other sizes also available) 1.82 kg/m ² (3.4 lb./sq. yd.)

Components

Panels

DUROCK® Cement Board

- Glass-fibre-mesh reinforced aggregated portland cement panel
- Improved abuse resistance
- CGC™ Plaster Bonder required
- Refer to product data sheet EDR-6295 for more information

FIBEROCK® Interior AQUA-TOUGH Panels

- Outperforms regular gypsum base, providing improved indentation and penetration resistance
- Economical alternative to concrete block construction
- Available in mesh-backed 15.9 mm (5/8") VHI (Very High Impact) version
- Refer to product data sheet EWB-W118 for more information

GRAND PRIX® Gypsum Base

- Solid gypsum lath in large, drywall-sized sheets, with blue face paper, designed for veneer plaster systems
- In one-coat veneer applications, only IMPERIAL and DIAMOND Finish Plasters can be used over GRAND PRIX Gypsum Base
- Refer to product data sheet EPL-OOP1 for more information

Monolithic

Monolithic Concrete

- Plaster cannot be applied directly to interior surface of exterior wall; the wall should be furred first and then suitable substrate applied to furring
- CGC Plaster Bonder required
- Two-coat veneer recommended

Unit Masonry

- May serve as substrate for a two-coat veneer system on interior walls
- Plaster cannot be applied directly to interior surface of exterior wall; the wall should be furred first and then suitable substrate applied to furring
- Concrete block should be new and unpainted, joints struck flush

Basecoat Plasters

Selector

	Conventional	Veneer
DIAMOND Veneer Basecoat Plaster		•
IMPERIAL Basecoat Plaster		•
RED TOP Gypsum Plaster	•	
STRUCTO-LITE Gypsum Plaster	•	

Basecoat plasters provide strength and rigidity, building the wall to thickness to provide substrate and bond for finish plaster. They are used to achieve even, straight walls and ceilings, compensating for substrate irregularities. Basecoat plasters are generally applied in one or two applications of 13 to 25 mm (1/2" to 1"), depending on the substrate.

DIAMOND® Veneer Basecoat Plaster

- Quality walls and ceilings for residential or commercial construction where the superior strength of IMPERIAL® Basecoat Plaster is not essential
- Superior workability provides ease and speed of application to achieve a high production rate with increased coverage
- Exceptional integral bond with all finish plasters
- Refer to product data sheet EPL-1080 for more information

IMPERIAL Basecoat Plaster

- High-strength veneer basecoat plaster (21 MPa (3,000 psi) compressive strength) for use in two-coat applications
- Can be used with a veneer plaster finish, such as DIAMOND Interior Finish or IMPERIAL Finish Plaster
- Where ease of workability and application are a major concern, use RED TOP® Finish, Gauging Plaster/lime putty
- Refer to product data sheet EPL-1078 for more information

RED TOP Gypsum Plaster

- General purpose basecoat plaster available in different forms to suit regional preferences
- Requires adding aggregate and water on the job
- Refer to product data sheet P752 for more information

Components

STRUCTO-LITE® Gypsum Plaster

- Mill-mixed, perlite-aggregated plaster requires only the addition of water on the job
- Less than half the weight of a sanded basecoat, but provides three times the insulation value ($k = 1.74$)
- Masonry for unit masonry only (high suction)
- Refer to product data sheet P754 for more information

Finish Plasters

Selector

	Conventional	Veneer
DIAMOND Finish Plaster	•	•
IMPERIAL Finish Plaster	•	•
RED TOP Finish	•	• ^a
RED TOP Gauging Plaster	•	• ^a
Gauging Plaster	•	• ^a

Finish plasters are applied to properly prepared gypsum basecoat plasters to form the wearing surface of walls and ceilings. Finishes are approximately 1.5 to 2.4 mm (1/16" to 3/32") thick, and can be smooth-troweled, floated or textured. Finish plaster is available in two types: factory-prepared finishes require only the addition of water; the gauging plaster and lime-type finishes require blending on the jobsite.

- Can be applied to conventional regular or high-strength sanded basecoats for improved surface hardness
- Improved surface appearance, abrasion resistance, and durability compared to drywall
- Ideal upgrade for both residential and commercial construction with smooth or textured finishes

Note

(a) May be applied over any veneer basecoat, but cannot be used as a one-coat veneer.

**Prepared Finish
Plasters**

Mill-mixed finish plasters that require only the addition of water on the jobsite.

DIAMOND Interior Finish Plaster

- Offers a strong, hard, white surface for commercial or residential construction where the extra hardness of IMPERIAL Finish is not required
- Ideal for applications requiring fast completion and durability, and often competitive in cost with taped and finished drywall
- Suitable as a single-coat finish directly on IMPERIAL Gypsum Base or over CGC Plaster Bonder on monolithic concrete when properly job sanded; also as a second coat over IMPERIAL or DIAMOND Veneer Basecoats or a sanded gypsum basecoat
- Unaggregated for smooth or skip trowel finishes; may be job-aggregated with up to an equal part by weight of clean silica sand for various textures
- Can be applied in electrical cable heating systems if properly job-sanded (see PM16)
- Refer to product data sheet EPL-1061 for more information

IMPERIAL Finish Plaster

- Provides the highest strength (21 MPa (3,000 psi)) and the most abrasion-resistant surface of any plaster finish
- Can be used over IMPERIAL Gypsum Base in one-coat veneer plaster systems, over IMPERIAL Basecoat Plaster in two-coat veneer plaster systems, as the finish over DIAMOND Veneer Basecoat or as the finish in a two-coat veneer plaster system over DUROCK Cement Board
- Requires only the addition of clean water
- Not recommended for use over lightweight gypsum basecoats
- Refer to product data sheet EPL-1078 for more information

RED TOP Finish Plaster

- An easy-working mill-mixed gauged plaster-lime finish for high productivity
- Excellent smoothness and troweling characteristics
- Refer to product data sheet P773 for more information

**Plaster Finishes
over Veneer
Basecoats**

Any properly prepared conventional plaster finish may be applied over IMPERIAL or DIAMOND Veneer Basecoat. This solution offers higher productivity, ease of application, a smooth surface, and a wide range of texturing options. Recommended for large continuous textured surfaces or integral coloured finishes.

Gauging Plasters

Specially prepared gypsum plasters designed to be mixed with lime putty to produce a finish plaster. Gauging plasters provide positive set and strength to the finish plaster. They can also be aggregated for texturing.

RED TOP Gauging Plaster

- A gray to pink plaster (depending on gypsum rock source)
- Available in Regular (unaggregated for sanded basecoats) and Quality (with perlite or sand fines) for lightweight basecoats
- Refer to product data sheet P786 for more information

Components

Gauging Plaster

- A premium gauging that provides greater strength, hardness, and resistance to surface abrasion than standard gauging plasters
- Use only over high-strength basecoats
- Available in Quick-Set and Slow-Set formulations
- Refer to product data sheet EWB-1328 for more information

Finishing Limes

When finish limes are mixed with water on the job, the result is lime putty (a component of finish plasters). Lime putty adds plasticity to the finish plaster, improving workability and surface smoothness.

RED TOP Single Hydrate Finish Lime

- Single-hydrate lime requires overnight soaking before blending with gauging plaster

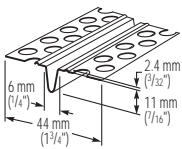
SNOWDRIFT Finish Limes

- Autoclaved double hydrate lime virtually eliminates possible future expansion in the finish coat from unhydrated magnesium oxides
- No slaking required

CGC Accessories

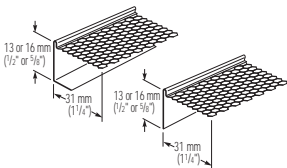
Zinc Control Joint, No. 093

- Relieves veneer plaster system expansion/contraction stresses in large ceiling areas
- Used from floor to ceiling or from header to ceiling in long partition runs
- Plastic tape is removed after plastering to keep joint clear
- Roll-formed from corrosion-resistant zinc
- Grounds: 2.4 mm (3/32"); length: 3 m (10')



Metal Trims

- Protect edges of veneer plaster finish at cased openings and intersections of walls and ceilings
- Fine-mesh expanded flanges reinforce applied veneer plaster
- Available in sizes for use with 12.7 mm (1/2") and 15.9 mm (5/8") IMPERIAL Gypsum Base
- Refer to product submittal sheet P760 for more information
- No. 801 provides 1.5 mm (1/16") grounds for one-coat veneer plaster systems
- No. 701 provides 2.4 mm (3/32") grounds for two-coat veneer plaster systems



DURABOND Setting-Type and SHEETROCK Setting-Type Joint Compounds

- Setting-type compounds for use with SHEETROCK Joint Tape in certain veneer plaster systems (see Veneer Plaster Systems Limitations in the Application Guide Specifications section)
- Refer to product submittal sheets J17A and J621 for more information

CGC Plaster Bonder

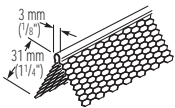
- Bonds new plaster to any structurally sound interior surface
- Required for applications of plaster over DUROCK Cement Board and monolithic concrete
- Refer to product submittal sheet P778 for more information

IMPERIAL Fiberglass Tape

- Highly crack-resistant glass fibre tape
- Designed to reinforce joints of IMPERIAL Gypsum Base over wood framing only
- Open weave allows for complete encasement during embedding
- Available in pressure sensitive (P) and staple-attached (S)
- Refer to product data sheet P618 for more information

Other Accessories and Trims

Lath accessories are attached to substrates to establish finished dimensions. Beads and trims establish proper plaster thickness (grounds) to reinforce corners and intersections, to act as terminus for plaster application and to serve as control joints in large expanses of walls and ceilings. These lath accessories are not supplied by CGC.



Corner Beads

- Easily nailed or stapled
- 1-1/4 expanded mesh flanges provide superior plaster key for crack resistance
- No. 800 provides 1.5 mm (1/16") grounds for one-coat veneer plaster systems
- No. 900 provides 2.4 mm (3/32") grounds for two-coat veneer plaster systems

Product Data

Compatibility Selectors

Suitable Substrates for Conventional Basecoats

Substrate	Basecoats		
	STRUCTO-LITE Gyp. Plaster	RED TOP Gypsum Plaster	RED TOP Wood Fibre
GRAND PRIX	•	•	•
CMU Block	•	•	•
Monolith Concrete ^a	•	•	•
ML CH-FMG	•	•	•
ML C-Studs			

Suitable Finishes for Basecoats

Basecoat	Finish Plasters			
	RED TOP Finish Plaster	Gauging Lime/Sand	IMPERIAL Finish Plaster	DIAMOND Interior Finish
RED TOP Gypsum Plaster	•	•		•
STRUCTO-LITE Gypsum Plaster		•		

Suitable Substrates for Veneer Plaster Systems

Substrate	Basecoats		Finish Plasters			
	DIAMOND Veneer Basecoat	IMPERIAL Veneer Basecoat	IMPERIAL Finish Plaster	DIAMOND Interior Finish	RED TOP Finish	Gauging/Lime
GRAND PRIX Base	•	•	•	•		
DUROCK Cement Board ^{a,b}	•	•				
FIBEROCK AR Panels ^{a,b}	•	•				
Monolithic Concrete ^{a,b}	•	•				
CMU Block	•	•				
Bonded Surface	•	•				

Metal Lath Selector

Type of Lath	Recommended Applications					
	Ornamental contour	Over interior substrate	Over exterior substrate ^c	Nail-on/tie-on flat ceiling	Solid partitions	Concrete centering
Diamond Mesh	•			• ^e	• ^g	
Self-Furring		•	• ^d	• ^f		
Flat Riblath				•		
10 mm (3/8") Riblath					•	•

Notes

(a) CGC Plaster Bonder must first be applied. (b) When job adding sand, refer to product submittal sheet. (c) For example: gypsum sheathing, replastering existing work, column fireproofing. (d) 1.82 kg/m² (3.4 lb/sq. yd.) galvanized lath. (e) For tie-on only: supports 400 mm (16") o.c. max. (f) For nail-on only: supports 400 mm (16") o.c. max. (g) Supports 400 mm (16") o.c. max.

Product Data

Compatibility Selectors

Veneer Plaster Systems Over IMPERIAL Gypsum Base

Basecoat Plaster (over metal lath)

Scratch coat

1. RED TOP Gypsum Plaster, sanded 45 kg (100 lbs.) : 0.057 m³ (2 cu. ft.)

2.

3.

4.

Brown coat

RED TOP Gypsum Plaster, sanded 45 kg (100 lbs.) : 0.057 m³ (2 cu. ft.)

RED TOP Gypsum Plaster, sanded 45 kg (100 lbs.) : 0.085 m³ (3 cu. ft.)

STRUCTO-LITE Plaster (Sand float finish only)

RED TOP Gypsum Plaster, perlited 45 kg (100 lbs.) : 0.057 m³ (2 cu. ft.) (sand float finish only)

Coverage Rates

Basecoat Plasters^a

Plaster product	Mix	Ratio: Aggregate (vol.) Basecoat (wt.)		Approx. Coverage per Ton of Gypsum Basecoat ^b					
		cu. ft./100 lbs	cu. m./tonne	Gypsum Lath		Metal Lath		Unit Masonry	
				sq. yd./ton	sq. m./tonne	sq. yd./ton	sq. m./tonne	sq. yd./ton	sq. m./tonne
STRUCTO-LITE Gypsum Plaster	regular	—	—	140	129	89 ^c	82 ^c	109	100
RED TOP Gypsum Plaster	sand	2.0	1.24	180	165	114	104	140	129
	sand	2.5	1.55	206	190	131	121	160	147
	sand	3.0	1.86	232	213	148	136	181	167
	perlite	2.0	1.24	176	162	112	103	137	126
	perlite	3.0	1.86	224	206	143	132	174	160
	vermiculite	2.0	1.24	171	157	109	100	133	123
	vermiculite	3.0	1.86	215	198	137	126	168	154

IMPERIAL Basecoat and Finish

Product	sq. ft./ton Gypsum Base	sq. ft./ton Masonry	sq. m./tonne ^d Gypsum Base	sq. m./tonne Masonry
IMPERIAL Basecoat	3250-4250	2700-3600	335-435	275-370
DIAMOND Basecoat	4000-5000	3500-4500	410-510	360-460
IMPERIAL (1-coat) Finish	3500-4000	Not recommended	360-410	Not recommended
IMPERIAL (2-coat) Finish	3200-3600	3200-3600	330-370	330-370

DIAMOND Interior and DIAMOND Interior Type F Finish Plaster

Substrate Surface	Sand Float Finish Sanded 1:2 (sand:DIF) ^e		Heavy Texture Finish Sanded 1:1 ^e	
	sq. ft./ton	sq. m./tonne ^f	sq. ft./ton	sq. m./tonne ^f
GRAND PRIX Gypsum Base	6000	610	4660	475
IMPERIAL OR DIAMOND Basecoat	5500	560	4330	440
Sanded RED TOP Basecoat	5000	510	4000	410
Monolithic concrete ^{g,h}	5500	560	4660	475
Veneer basecoat over monolithic concrete ^g	5500	560	4330	440

Notes

(a) Coverage values based on laboratory determined dry densities. Actual coverage may vary due to job conditions. (b) Grounds (including finish coat): gypsum lath—13 mm (1/2") (face of lath), metal lath—19 mm (3/4") (back of lath), unit masonry—16 mm (5/8"). (c) Lightweight aggregate plasters are not recommended over metal lath when the finish coat is to be smooth troweled. (d) Coverage rounded to nearest 5 sq. m. per tonne. (e) Coverage based on units of aggregated mixture (combined weight of sand and DIAMOND (finish)). (f) Coverage rounded to nearest 5 sq. m. per tonne. (g) CGC Plaster Bonder required. (h) Must be job sanded, minimum 1/2 : 1, sand to plaster.

Coverage Rates

Gauging Plasters

Product	Finish Texture	Gauging to Lime, to Sand (dry wt.)	Approx. Coverage per tonne (sq. m.) per Ton (sq. yds.) ^a
Lime Finish	smooth trowel-extremely hard surface	45 kg (100 lbs.) gauging	350 (380)
		45 kg (100 lbs.) lime	
	smooth trowel-hard surface	45 kg (100 lbs.) gauging	396 (430)
		90 kg (200 lbs.) lime	
RED TOP, Gauging Plaster and Lime Finish	smooth trowel	22.5 kg (50 lbs.) gauging 45 kg (100 lbs.) lime	359 (390)
RED TOP, Gauging Plaster, Lime and Sand Finish	float finish	22.5 kg (50 lbs.) gauging	258 (280)
		45 kg (100 lbs.) lime	
		180 kg (400 lbs.) sand ^b	

Coverage Rates

Use of Aggregates with Gypsum Plasters Maximum Recommended Proportions

			Maximum Aggregate Quantity, cu. ft., to be used with 45 kg (100 lb.) of Neat Gypsum Plaster							
			Under smooth trowel finishes				Under texture finishes			
			Sand ^c		Perlite ^d		Sand ^c		Perlite ^d	
Plaster Base	No. of Coats	Type of Coats	cu. ft./ 45 kg (100 lb)	cu. m/tonne	cu. ft./ 45 kg (100 lb)	cu. m/tonne	cu. ft./ 45 kg (100 lb)	cu. m/tonne	cu. ft./ 45 kg (100 lb)	cu. m/tonne
gypsum lath	3	scratch	2	1.35	2	1.35	2	1.35	2	1.35
		brown	3	2.02	2	1.35	3	2.02	3 ^f	2.02 ^e
	2	basecoat	2.5	1.68	2	1.35	2.5	1.68	2	1.35
metal lath	3	scratch	2	1.35	—	—	2	1.35	2	1.35
		brown	3	2.02	—	—	3	2.02	2	1.35
unit masonry	3	scratch	3	2.02	3	2.02	3	2.02	3	2.02
		brown	3	2.02	3	2.02	3	2.02	3	2.02
	2	basecoat	3	2.02	3	2.02	3	2.02	3	2.02

Notes

(a) 1.5 mm (1/16") thick. (b) Mixtures with less or more sand (1:2:1 to 1:2:8) are acceptable, but coverage will vary. (c) Approximately six No. 2 shovels of sand equal 0.028m³ (1 cu. ft.). (d) In a construction with metal lath as the plaster base, perlite or vermiculite aggregate is not recommended for use in the basecoat plaster, unless a float finish is used. (e) Quantity recommended only if plaster is applied 25 mm (1") thick; otherwise use 0.057m³ (2 cu. ft.)

Product Data

Spacing Specifications

Maximum Frame Spacing—Metal Lath^a

Maximum Allowable Spacing			Vertical Supports (Wall) Wood		Metal Solid Partitions		Others ^c		Horizontal Supports (Ceiling) Wood or Concrete		Metal	
Type of Lath ^b	Weight		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
	kg./sq. m.	lbs./sq. yd.										
Diamond Mesh	1.4	2.5	406	16	406	16	305	12	— ^e	—	— ^e	—
Diamond Mesh ^d	1.8	3.4	406	16	406	16	406	16	406	16	343	13.5
3 mm (1/8") Z-Rib	1.5	2.75	406	16	406	16	406	16	406	16	305	12
3 mm (1/8") Z-Rib	1.8	3.4	483	19	610	24	483	19	483	19	483	19
10 mm (3/8") Rib	1.8	3.4	610	24	—	—	610	24	610	24	610	24
10 mm (3/8") Rib	2.2	4.0	610	24	—	—	610	24	610	24	610	24

Frame and Fastener Spacing—GRAND PRIX Plaster Base

Type Framing	Base Thickness		Fastener ^f	Max. Frame Spacing		Max. Fastener Spacing	
	mm	in.		mm	in.	mm	in.
Wood	9.5	3/8	Nails—(13 ga.) 28 mm (1-1/8") long, 7.5 mm (19/64") flat head, blued. Staples—1.4 mm (16 ga.) galv. flattened wire, flat crown 11 mm (7/16") wide, 25 mm (1") divergent legs	406	16	127 ^g	5
Steel Stud	9.5	3/8	25 mm (1") drywall screws	406	16	305 ^h	12
Metal Furring	9.5	3/8	25 mm (1") drywall screws	406	16	305 ^h	12

Maximum Spacing—Main Runner—Carrying Channels

Main Runner Channel Size		Maximum c. to c. Spacing of Main Runners		Maximum Spacing of Hangers Along Runners	
mm	in.	mm	ft.	mm	ft.
19.1	3/4	914	3	610	2
19.1	3/4	686	2-1/4	914 ⁱ	3
38.1	1-1/2	1219	4	914	3
38.1	1-1/2	1067	3-1/2	1067	3-1/2
38.1	1-1/2	914	3	1219	4
50.8	2	1219	4	1524	5
50.8	2	762	2-1/2	1829	6
50.8	2	610	2	2134	7

Maximum Spacing—Cross-Furring Members

Cross-furring size	Maximum c. to c. Spacing of Cross-furring		Main Runner or Support Spacing	
	mm	in.	mm	ft.
19.1 mm (3/4") C.R. Channel	610	24	914	3
19.1 mm (3/4") C.R. Channel	483	19	1067	3-1/2
19.1 mm (3/4") C.R. Channel	406	16	1219	4
25.4 mm (1") H.R. Channel	610	24	1219	4
25.4 mm (1") H.R. Channel	483	19	1372	4-1/2
25.4 mm (1") H.R. Channel	305	12	1524	5
9.5 mm (3/8") Pencil Rod ^j	483	19	610	2
9.5 mm (3/8") Pencil Rod ^j	305	12	762	2-1/2

Notes

(a) For spacing on fire-rated constructions, see test reports. (b) All types made from copper alloy steel containing from 0.20% to 0.25% pure copper, and painted with rust-inhibitive black asphaltum paint. Sheet size is 686 x 2438 mm (27" x 96"). (c) Including vertical furring. (d) Available in both copper alloy and galvanized steel. (e) Not recommended except for fireproofing of steel shapes. (f) Metric; fastener dimensions: 19/64" = 7.5 mm; 3/8" = 11.1 mm; 1" = 25.4 mm; 1-1/8" = 28.6 mm; 1-1/4" = 31. (g) To prevent edge damage, fasten at least 10 mm (3/8") from edges and ends of wood studs. (h) Space Type S screws 50 mm (2") from edge of lath. (i) For concrete joist construction only—where (8 ga.) wire may be inserted in joist before concrete is poured. (j) Primary usage is on furred ceiling members.

Support Area—Hangers^a

Hanger Size and Type	Typical Ceiling Area per Hanger		Maximum Tensile Load kg ^b
	sq. m.	sq. ft.	
2.9 mm (9 ga.) galvanized wire	1.2	12.5	154
3.3 mm (8 ga.) galvanized wire	1.5	16.0	185
4.8 mm (3/16") mild steel rod ^c	1.9	20.0	248
6.4 mm (1/4") mild steel rod ^c	2.1	22.5	441
4.8 mm x 25.4 mm (3/16" x 1") mild steel flat ^c	2.3	25.0	1684

Maximum Frame Spacing^d

Base and Finish Assembly	Steel Framing Spacing		Wood Framing Spacing	
	mm	in.	mm	in.
12.7 mm (1/2") GRAND PRIX Gypsum Base				
one layer, 1-coat system	406.4	16	406.4	16
one layer, 2-coat system	609.6	24	609.6 ^b	24 ^e
two layers, 1- & 2-coat system	609.6	24	609.6	24
12.7 mm (1/2") DUROCK Cement Board				
one layer, 2-coat system ^f	406.4	16	406.4	16
two layer, 2-coat system ^f	406.4	16	406.4	16

Maximum Fastener Spacing^g

Assembly Description	Type of Fastener	Location	Maximum Spacing	
			mm	in.
single layer, wood frame and face layer of double layer assembly	Ann. Ring Nails ^h	ceilings and walls	178	7
			203	8
single layer, resilient channel, steel frame base layer of double layer construction	31 mm (1-1/4") Type W Screws	ceilings and walls	305	12
			25 mm (1") Type S Screws ⁱ	305
single layer, resilient channel, steel frame base layer of double layer construction	Ann. Ring Nails ^h or 31 mm (1-1/4") Type W Screws	ceilings and walls	610	24

Notes

(a) These are typical properties. Refer to manufacturer's specifications. (b) Based on minimum yield 227,527 kPa (33,000 psi). (c) Where severe moisture conditions may occur, rods galvanized or painted with rust-inhibitive paint, or galvanized straps are recommended. (d) For perpendicular or parallel application—perpendicular preferred for maximum strength; parallel application not recommended for ceilings. For fire-rated construction, see test report. (e) 610 mm (24") spacing on wood framing and all steel-framed applications require joint treatment with SHEETROCK Setting-Type Compound and SHEETROCK Joint Tape. (f) All DUROCK Cement Board veneer plaster systems require joint treatment with SHEETROCK Joint Tape and SHEETROCK Setting-Type Joint Compound (DURABOND or EASY SAND) and application of CGC Plaster Bonder. (g) For non-fire rated assemblies, select fasteners for fire-rated construction from test report or from table in SA100. (h) For annular ring nails, select length to provide 19 mm (3/4") penetration into wood framing. (i) Screws for steel framing should be at least 13 mm (1/2") longer than the nominal base thickness.

Performance Testing

Combining compatible basecoat and finish plasters with the appropriate substrate is an important factor in developing sufficient surface strength and resistance to abuse and cracking.

Both basecoat and finish plasters can be used in conjunction with a variety of base panels. When selecting a plaster system, it is important to take into account abuse resistance, acoustics and aesthetics.

Performance Tests

CGC Plaster Systems result from a program of extensive testing and continuous improvements, backed by over 100 years of experience in the building materials industry.

Testing Methods

All CGC products and systems manufactured by USG undergo exhaustive testing to ensure that they meet exacting standards.

Independent testing of abuse-resistant assemblies is performed by H.P. White Laboratory, Inc., a ballistic research and development facility that also conducts forced entry and drop testing. H.P. White Laboratory developed the first set of comprehensive test procedures and standards for the evaluation of the physical security of structures and structural subassemblies. Although originally designed for government and military organizations, these procedures have evolved to include commercial applications such as banks, currency exchanges and prisons.

Products are manufactured and tested in accordance with ASTM standards. ASTM International is one of the largest voluntary standards development organizations in the world, and is a trusted source for technical standards for materials, products, systems, and services.

Standards Compliance

Plasters

	ASTM C28	ASTM C61	ASTM C206 Type S	ASTM C206 Type N	ASTM C587	ASTM C35
RED TOP Gauging Plaster	•					
SNOWDRIFT Finish Lime			•			
DIAMOND Interior Finish Plaster					•	
IMPERIAL Finish Plaster					•	
RED TOP Finish	•					
RED TOP Gypsum Plaster	•					
STRUCTO-LITE Gypsum Plaster	•					•

Note

(a) 19,300 kPa (2,800 psi) compressive strength when tested in accordance with ASTM C472 and sanded 90 kg (200 lbs.) of sand to 45 kg (100 lbs.) of STRUCTO-BASE Gypsum Plaster.

Standards Compliance

Substrates	ASTM C37	ASTM C588	ASTM E84	ASTM E119 ^a	ASTM E136	ASTM C1278
FIBEROCK Interior AQUA-TOUGH Panels			•	• ^b		•
IMPERIAL Gypsum Base		•	•	•	•	

Fixture Attachment Load Table

Fastener Type	Size		Base Assembly	Allowable Withdrawal Resistance		Allowable Shear Resistance	
	mm	in.		N ^c	lbs.	N ^c	lbs.
toggle bolt or hollow wall fastener	3.18	1/8	13 mm (1/2") gypsum base	89	20	178	40
	4.76	3/16		134	30	223	50
	6.35	1/4		178	40	267	60
	3.18	1/8	13 mm (1/2") gypsum base and 0.5 mm (25 ga.) steel stud	312	70	445	100
	4.76	3/16		356	80	556	125
	6.35	1/4		690	155	779	175
No. 8 sheet metal screw			13 mm (1/2") gypsum base and 0.5 mm (25 ga.) steel stud or 0.5 mm (25 ga.) steel insert	223	50	356	80
TYPE S bugle head screw			13 mm (1/2") gypsum base and 0.8 mm (20 ga.) steel stud or 0.8 mm (20 ga.) steel insert	267	60	445	100
TYPE S-12 bugle head screw			13 mm (1/2") gypsum base and 0.8 mm (20 ga.) steel stud or 0.8 mm (20 ga.) steel insert	378	85	601	135
10 mm (3/8") TYPE S pan head screw			0.5 mm (25 ga.) steel to 0.5 mm (25 ga.) steel	312	70	534	120
two bolts welded to steel insert	4.76	3/16	grab bar attachment	779	175	890	200
	6.35	1/4		890	200	1113	250
bolt welded to 38 mm (1-1/2") chan.	6.35	1/4	plumber's bracket	890	200	1113	250

Dimensional Stability

	Hygrometric Coefficient of Expansion (unrestrained) [mm/mm/%R.H.(5%-90% R.H.)]	Thermal Coefficient of Expansion (unrestrained) [mm/mm/C°(4-38°F)]
STRUCTO-LITE Plaster (regular)	4.8x10 ⁻⁶	13.1x10 ⁻⁶
Sanded Gypsum Plaster (100:2, 100:3)	1.5x10 ⁻⁶	12.6x10 ⁻⁶
Gypsum Lath	7.2x10 ⁻⁶	16.2x10 ⁻⁶
Vermiculite Gypsum Plaster (100:2)	3.8x10 ⁻⁶	—

Basecoat Plasters

Plaster Product	Mix	Ratio: Aggregate (vol.) Basecoat (wt.)		Approximate Compressive Strength Dry ^d		Weight	Conductivity
		cu. m/tonne	cu. ft./45 kg	psi	kg/sq. cm.	pcf-dry	(k)
RED TOP Gypsum Plaster	sand	1.14	2.0	62	875	107	5.51
	sand	1.43	2.5	53	750	108	—
	sand	1.71	3.0	46	650	109	5.60
	perlite	1.14	2.0	49	700	48	1.64
	perlite	1.71	3.0	37	525	41	1.31
	vermiculite	1.14	2.0	33	465	48	1.74
	vermiculite	1.71	3.0	20	290	41	1.42

Note

(a) When tested as part of an assembly. (b) 15.9 mm (5/8") thick panel. (c) Newtons. (d) Average laboratory results when tested in accordance with ASTM C472. Figures may vary slightly for products from individual plants.

Performance Selector

Partitions

Steel Framed



1 Hour Fire-rated Construction		Non-loadbearing		Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index	
<p>wt. 6 124 mm (4 7/8")</p>	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base or GRAND PRIX FIRECODE Core Abuse- Resistant Gypsum Base or FIBEROCK Panels 92 mm (3-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. optional veneer plaster 	ULC Des W453 or W407 or UL Des U419 or U465	40	USG-860808	SA700 SA920	1	
			49	SA-870717 Based on 75 mm (3") SAFB in cavity			
			51	RAL-TL-90-166 Based on 15.9 mm (5/8") FIRECODE C Core panels and 75 mm (3") SAFB, and veneer finish surface SAFB 625 mm (25") wide, creased to fit cavity			
<p>wt. 6 117 mm (4 5/8")</p>	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base one side 89 mm (3-1/2") 0.8 mm (20 gauge) steel studs 400 mm (16") o.c. 12.7 mm (1/2") DUROCK Cement Board other side 75 mm (3") SAFB CGC Plaster Bonder over cement board and treated joints joints treated with CGC setting-type joint compound and paper tape DIAMOND veneer basecoat with IMPERIAL finish plaster 	UL Des U404			SA920 SA934	2	
<p>wt. 6 121 mm (4 3/4")</p>	<ul style="list-style-type: none"> 15.9 mm (5/8") DUROCK Cement Board or 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base 89 mm (3-1/2") 0.8 mm (20 gauge) studs, 400 mm (16") o.c. 75 mm (3") SAFB CGC Plaster Bonder over untreated joint areas joints treated with CGC setting-type joint compound and paper tape CGC Plaster Bonder over cement board and treated joints DIAMOND veneer basecoat with veneer or conventional finish 	UL Des U407			SA920 SA934	3	
<p>wt. 7 100 mm (4")</p>	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Panels 64 mm (2-1/2") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. 38 mm (1-1/2") SAFB joints finished optional veneer finish 	ULC Des W453 or UL Des U419 or U448	41	RAL-TL-69-148 Based on same construction without THERMAFIBER SAFB	SA920	4	
			50	SA-800504			
<p>wt. 5 130 mm (5 1/8")</p>	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 92 mm (3-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. 75 mm (3") SAFB Resilient channel one side spaced 610 mm (24") o.c. optional veneer plaster 	ULC Des W453 or W408 or UL Des U419 or U451	50	RAL-TL-87-156	SA920	5	
			54	RAL-TL-83-216 Based on 15.9 mm (5/8") thick panels			
<p>Note All products are not available in all markets. Consult your CGC Sales Representative for details.</p>							

Partitions

Steel Framed



1 Hour Fire-rated Construction		Non-loadbearing	Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
clg. wt. 5 	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 150 mm (6") 0.8 mm (20 gauge) steel studs 610 mm (24") o.c. – 125 mm (5") SAFB – Resilient channel one side spaced 610 mm (24") o.c. • optional veneer plaster 	ULC Des W453 or UL Des U419 or U451	56	RAL-TL-87-139	SA920	6
			56	RAL-TL-84-141 Based on 15.9 mm (5/8") thick SHEETROCK FIRECODE C Core Gypsum Panels		
1-1/2 Hour Fire-rated Construction wt. 7 	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 92 mm (3-5/8") 0.8 mm (20 gauge) studs 610 mm (24") o.c. – 75 mm (3") SAFB – Resilient channel one side spaced 610 mm (24") o.c. – 2 layers gypsum panels – face layer joints finished • optional veneer plaster 	UL Des U452	58	RAL-TL-83-215	SA920	7
			59	RAL-TL-84-140 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") THERMAFIBER SAFB		
2 Hour Fire-rated Construction wt. 11 	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base one side • 12.7 or 15.9 mm (1/2" or 5/8") Durock Cement Board – 89 mm (3-1/2") 0.8 mm (20 gauge) steel studs 400 mm (16") o.c. – 75 mm (3") SAFB • CGC Plaster Bonder over Cement Board and treated joints • face layer joints treated with CGC setting-type joint compound and paper tape • optional veneer plaster 	UL Des U404			SA920 SA700	8
wt. 9 92 mm (3 5/8") 	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base each side – 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. – face layer joints finished • optional veneer plaster 	ULC Des W453 or UL Des U419 or U412	50	USG-840817 Based on 92 mm (3-5/8") stud assembly without mineral wool batt	SA920	9
			52	SA-860932 Based on lamin. face layer, 38 mm (1-1/2") mineral wool batt and 64 mm (2-1/2") studs		
			54	CK-654-40 Based on 64 mm (2-1/2") studs, screw-attached face layer and 38 mm (1-1/2") mineral wool batt		
			55	SA-800421 Based on 92 mm (3-5/8") studs and 38 mm (1-1/2") mineral wool batt		

Performance Selector

Partitions

Steel Framed



2 Hour Fire-rated Construction		Non-loadbearing	Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
<p>wt. 11 125 mm (5")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base, or FIBEROCK Panels – 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. – face layer joints finished • optional veneer plaster 	ULC Des W453 or UL Des U419 or U411	48	BBN-770408 Based on 92 mm (3-5/8") studs and 15.9 mm (5/8") SHEETROCK FIRECODE C Core Gypsum Panels	SA920	10
			56	USG-840818 Based on 92 mm (3-5/8") studs and 75 mm (3") mineral wool batt		
<p>wt. 7 143 mm (5 5/8")</p>	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 92 mm (3-5/8") 0.8 mm (20 gauge) studs 610 mm (24") o.c. – 75 mm (3") SAFB – Resilient channel one side spaced 610 mm (24") o.c. – single-layer gypsum panels screw-attached to studs – double layer screw-attached to channel – face layer joints finished • optional veneer plaster 	ULC Des W453 or UL Des U419 or U453	59	RAL-TL-84-136 Based on 15.9 mm (5/8") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs, 125 mm (5") mineral wool batt	SA920	11
			60	RAL-TL-87-140 Based on 12.7 mm (1/2") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs, 125 mm (5") mineral wool batt		
<p>wt. 9 125 mm (5")</p>	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 64 mm (2-1/2") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. – 25 mm (1") SAFB – Resilient channel one side, spaced 610 mm (24") o.c. – double layer gypsum panels screw-attached to channel, 2 layers screw-attached to steel studs – face layer joints finished • optional veneer plaster 	UL Des U454	57	USG-871207 Based on 15.9 mm (5/8") thick panels	SA920	12
			60	RAL-TL-87-154		
			61	RAL-TL-83-214 Based on 15.9 mm (5/8") thick panels		
			63	RAL-TL-87-141 Based on 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") mineral wool batt		
<p>wt. 9 125 mm (5")</p>	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 64 mm (2-1/2") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. – 25 mm (1") SAFB – Resilient channel one side, spaced 610 mm (24") o.c. – double layer gypsum panels screw-attached to channel, 2 layers screw-attached to steel studs – face layer joints finished • optional veneer plaster 	UL Des U454	62	RAL-TL-84-139 Based on 15.9 mm (5/8") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") mineral wool batt		
			62	RAL-TL-84-139 Based on 15.9 mm (5/8") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") mineral wool batt		
<p>wt. 21 121 mm (4 3/4")</p>	<ul style="list-style-type: none"> • 9.5 mm (3/8") ROCKLATH FIRECODE Core Plaster Base – 64 mm (2-1/2") 0.8 mm (20 gauge) studs 400 mm (16") o.c. – 1542 g (3.4 lb.) self-furring diamond mesh metal lath • 19 mm (3/4") gypsum-sand plaster 	UL Des U484			SA920	13
<p>wt. 45 100 mm (4")</p>	<ul style="list-style-type: none"> • STRUCTOCORE 1.1 mm (18 gauge) steel panels attached to 1.1 mm (18 gauge) steel perimeter angles • 19 mm (3/4") minimum coverage STRUCTO-BASE Gypsum Plaster sanded at 2:1 by weight in two coats • IMPERIAL Finish Plaster applied 1.5 mm (1/16") thick 	UL Des U476			SA1119 SA920 SA929	14
3 Hour Fire-rated Construction						
<p>wt. 13 117 mm (4 5/8")</p>	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. • optional veneer plaster 	ULC Des W453 or W417 or UL Des U419 or U435			SA920	15

Partitions

Steel Framed



2 Hour Fire-rated Construction		Non-loadbearing	Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
wt. 11 	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 92 mm (3-5/8") 0.8 mm (20 gauge) studs 610 mm (24") o.c. 75 mm (3") SAFB Resilient channel one side, spaced 610 mm (24") o.c. face layer joints finished 	ULC Des W453 or UL Des U419 or U455	61	RAL-TL-87-153 Based on 15.9 mm (5/8") thick panels	SA920	16
			62	RAL-TL-83-213 Based on 15.9 mm (5/8") thick panels		
			63	RAL-TL-84-138 Based on 15.9 mm (5/8") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") THERMAFIBER SAFB		
			64	RAL-TL-87-142 Based on 150 mm (6") 0.8 mm (20 gauge) structural studs and 125 mm (5") THERMAFIBER SAFB		
			65	RAL-TL-84-150 Based on 15.9 mm (5/8") thick panels, 150 mm (6") 0.8 mm (20 gauge) structural studs, 125 mm (5") THERMAFIBER SAFB, acoustical sealant bead between panels and studs, dabs 200 mm (8") o.c. between panel layers on stud side		
wt. 55 	<ul style="list-style-type: none"> STRUCTOCORE 1.1 mm (18 gauge) steel panels attached to 1.1 mm (18 gauge) steel perimeter angles STRUCTO-BASE Gypsum Plaster sanded at 2:1 by weight in two coats IMPERIAL Finish Plaster applied 1.5 mm (1/16") thick 	UL Des U476			SA1119 SA920 SA929	17
4 Hour Fire-rated Construction						
wt. 17 	<ul style="list-style-type: none"> 4 layers 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base, each side 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. optional veneer plaster 	ULC Des W453 or W417 or UL Des U419 or U435	62	SA-830113 Based on assembly with 38 mm (1-1/2") mineral wool batt in cavity	SA920	18
1 Hour Fire-rated Construction						
wt. 6 	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base, each side or FIBEROCK Panels 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs 610 mm (24") o.c. in 2 rows 15.9 mm (5/8") gypsum panel gussets or steel runner braces spanning chase screw-attached to studs optional veneer plaster 	UL Des U420	52	RAL-TL-76-155 Based on 89 mm (3-1/2") insulation one side	SA920	19
1 Hour Fire-rated Construction						
wt. 6 	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base or FIBEROCK Panels 89 mm (3-1/2") 0.8 mm (20 gauge) steel structural studs 610 mm (24") o.c. optional veneer plaster 	UL Des U423 or U425	40	USG-810519	SA920 SA700	20
			41	USG-810518 Based on 50 mm (2") mineral wool batt in cavity		

Performance Selector

Partitions

Steel Framed



1 Hour Fire-rated Construction		Loadbearing (Refer to ULC/UL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
wt. 9 	<ul style="list-style-type: none"> • 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 89 mm (3-1/2") 0.8 mm (20 gauge) steel structural studs 610 mm (24") o.c. – Resilient channel one side, spaced 610 mm (24") o.c. – face layer joints finished • optional veneer plaster 	UL Des U423 or U440	51	SA-840715 Based on 89 mm (3-1/2") 1.4 mm (16 ga) struc studs and lateral bracing	SA920	21
			61	SA-830628 Based on 89 mm (3-1/2") 1.4 mm (16 ga) struc studs, 15.9 mm (5/8") thick panels, lateral bracing and 75 mm (3") mineral wool batt		
wt. 7 	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base one side – 89 mm (3-1/2") 0.8 mm (20 gauge) steel structural studs 400 mm (16") o.c. • 12.7 mm (1/2") DUROCK Cement Board – 75 mm (3") SAFB • CGC Plaster Bonder over cement board and treated joints • joints treated with CGC setting-type joint compound and paper tape • DIAMOND veneer basecoat with IMPERIAL finish 	UL Des U404			SA920 SA934	22
wt. 7 	<ul style="list-style-type: none"> • 15.9 mm (5/8") DUROCK Cement Board or GRAND PRIX FIRECODE Core Gypsum Base – 89 mm (3-1/2") 0.8 mm (20 gauge) steel structural studs 400 mm (16") o.c. – 75 mm (3") mineral wool batt • CGC Plaster Bonder over untreated joint areas • joints treated with CGC setting-type joint compound and paper tape • CGC Plaster Bonder over cement board and treated joints • DIAMOND veneer basecoat with veneer or conventional finish 	UL Des U407			SA920 SA934	23
3 Hour Fire-rated Construction						
wt. 17 	<ul style="list-style-type: none"> • 12.7 mm (1/2") SHEETROCK Gypsum FIRECODE C Core Panels, each side – 89 mm (3-1/2") 0.8 mm (20 gauge) steel structural studs 610 mm (24") o.c. – face layer joints finished • rating also applies with IMPERIAL FIRECODE C Core Gypsum Base and veneer finish surface 	UL Des U426			SA920	24

Partitions

Wood Framed



1 Hour Fire-rated Construction	Loadbearing (Refer to ULC/UL Design Directory listings for loading conditions. See page 4.)		Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
<p>wt. 7</p> <p>121 mm (4 3/4")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base or FIBEROCK Panels – 2x4 wood stud 400 or 610 mm (16" or 24") o.c. – joints finished – optional veneer plaster 	<p>ULC Des W301 or UL Des U305 or U314</p>	34	<p>USG-30-FT-G&H Based on 400 mm (16") stud spacing and screws 150 mm (6") o.c.</p>	SA920	25
			37	<p>USG-860807 Based on 610 mm (24") stud spacing</p>		
			46	<p>BBN-700725 Based on 610 mm (24") stud spacing and 75 mm (3") mineral wool batt</p>		
<p>wt. 12</p> <p>150 mm (6")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base or SHEETROCK Water-Resistant FIRECODE Core Gypsum Panels or FIBEROCK Panels – 2x4 wood studs 400 mm (16") o.c. – joints finished • optional veneer plaster 	<p>ULC Des U301 or UL Des U301</p>	52	<p>USG-810218 Based on same assembly (non-fire rated) without mineral wool batt</p>	SA920	26
			58	<p>USG-810219</p>		
<p>1 Hour Fire-rated Construction</p> <p>162 mm (6 1/2")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – 2x4 staggered wood stud 610 mm (24") o.c. on 2x6 common plate – joints finished • optional veneer plaster 	<p>UL Des U340</p>	47	<p>NBCC W7a With insulation</p>	SA920	27

Performance Selector

Floor/Ceilings

Steel Framed



2 Hour Fire-rated Construction		Steel Bar Joist Framing (Refer to ULCAUL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance		Reference	
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
<p>clg. wt. 3</p> <p>352 mm (13 5/8")</p>	<ul style="list-style-type: none"> • 12.7 or 15.9 mm (1/2" or 5/8") GRAND PRIX FIRECODE C Core Gypsum Base – metal furring channel 610 mm (24") o.c. – joints finished – 64 mm (2-1/2") concrete on riblath or corrugated steel deck – steel bar joists • optional veneer plaster 	<p>ULC Des I507 or UL Des G515</p>	54*	<p>ASTM E1414</p> <p>*CAC value per ASTM E1414 test procedure for horizontally adjacent spaces</p>	SA920	28
3 Hour Fire-rated Construction						
<p>clg. wt. 3, clg. wt. 4</p> <p>406 mm (16")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – metal fur channel 610 mm (24") o.c. – joints finished – 64 mm (2-1/2") concrete on corrugated steel deck or riblath – steel bar joists, 610 mm (24") o.c. • optional veneer plaster 	<p>ULC Des G512 or UL Des G512</p>			SA920	29

Floor/Ceilings

Wood Framed



1 Hour Fire-rated Construction		Dimensional Lumber (Refer to ULC/UL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance			Reference	
Construction Detail	Description	Test Number	STC	IIC	Test Number	ARL	Index
clg. wt. 3 	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base, ceiling – 25 mm (1") nominal wood sub and finished floor – 2x10 wood joist 400 mm (16") o.c. – joints finished • optional LEVELROCK Floor Underlayment • optional SRM-25 or SRB sound mat • optional veneer plaster 	ULC Des M500 or UL Des L501	38	32	CK-6412-7 Based on 31 mm (1-1/4") nominal wood floor	SA305 SA920	30
			39	56			
clg. wt. 3 	<ul style="list-style-type: none"> 12.7 or 15.9 mm (1/2" or 5/8") GRAND PRIX FIRECODE C Core Gypsum Base, ceiling – 25 mm (1") nominal wood sub and finished floor – 2x10 wood joist 400 mm (16") o.c. – joints finished • optional 19 mm (3/4") LEVELROCK Floor Underlayment • optional SRM-25 or SRB sound mat • optional veneer plaster 	ULC Des L512 or UL Des L512				SA305 SA920	31
clg. wt. 3 	<ul style="list-style-type: none"> 12.7 or 15.9 mm (1/2" or 5/8") GRAND PRIX FIRECODE C Core Gypsum Base – 25 mm (1") nominal wood sub and finished floor – 2x10 wood joist 400 mm (16") o.c. – Resilient channel spaced 610 mm (24") o.c. – joints finished • optional veneer plaster 	UL Des L514				SA920	32
clg. wt. 3 321 mm (12 5/8") 	<ul style="list-style-type: none"> 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – 42 mm (1-5/8") perlite-sand concrete – plywood subfloor – 2x10 wood joists 400 mm (16") o.c. – Resilient channel – joints finished • optional veneer plaster 	UL Des L516	59		USG 740704 Based 75 mm (3") mineral wool batt, 19 mm (3/4") gypsum concrete and 12.7 mm (1/2") SHEETROCK FIRECODE C Core Gypsum Panels	SA920	33
			47		USG 740703 Based on 75 mm (3") mineral wool batt, vinyl tile atop flooring		
			65		USG 740705 Based on 75 mm (3") mineral wool batt, 1247 g (44 oz.) carpet and 1134 g (40 oz.) pad atop flooring		
clg. wt. 4 343 mm (13 1/2") 	<ul style="list-style-type: none"> 2 layers 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – 25 mm (1") nominal wood sub and finished floor – 2x10 wood joist 400 mm (16") o.c. – Resilient channel – joints finished • optional veneer plaster 	UL Des L510			Assembly not recommended when sound control is a major consideration.	SA920	34

Performance Selector

Floor/Ceilings

Wood Framed



2 Hour Fire-rated Construction	Engineered Joist (Refer to ULC/UL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance		Reference		
Construction Detail	Description	Test Number	STC	Test Number	ARL Index	
<p>clg. wt. 8</p> <p>318 mm (12 1/2")</p>	<ul style="list-style-type: none"> • base layer: 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – Resilient channel • Double face layer: 15.9 mm (5/8") SHEETROCK FIRECODE C Core Gypsum Panels – 241 mm (9-1/2") wood truss joists 610 mm (24") o.c. – joints finished – Floor: 16 mm (5/8") T&G plywood • optional 19 mm (3/4") LEVELROCK Floor Underlayment • optional veneer plaster 	<p>UL Des L538</p>			SA920	35
<p>1 Hour Fire-rated Construction</p> <p>clg. wt. 5</p> <p>349 mm (13 3/4")</p>	<p>Truss</p> <ul style="list-style-type: none"> • 2 layers 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base – joints finished – 18 mm (23/32") plywood – 300 mm (12") parallel chord wood floor truss, 610 mm (24") o.c. • optional veneer plaster 	<p>UL Des L542</p>			SA920	36

Floor/Ceilings

Wood Framed



1 Hour Fire-rated Construction	Dimensional Lumber (Refer to ULC/UL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance		Reference		
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
<p>clg. wt. 3</p> <p>362 mm (14 1/2")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – wood truss, 610 mm (24") o.c. – 19 mm (3/4") plywood floor – metal furring channel 610 mm (24") o.c. – joints finished • optional veneer plaster <p><i>Resilient Channel may be used in place of metal furring channel</i></p>	UL Des L528			SA920	37
<p>clg. wt. 3</p> <p>530 mm (20 7/8")</p>	<ul style="list-style-type: none"> • 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base – wood truss, 610 mm (24") o.c. – 19 mm (3/4") plywood floor • CGC DGL Drywall Suspension System – joints finished • optional 19 mm (3/4") LEVELROCK Floor Underlayment • optional veneer plaster 	UL Des L529			SC2000 SA920	38

Performance Selector

Roof/Ceilings

Steel Framed



1-1/2 Hour Fire-rated Construction	Steel Bar Joist Framing (Refer to ULCAUL Design Directory listings for loading conditions. See page 4.)	Acoustical Performance		Reference		
Construction Detail	Description	Test Number	STC	Test Number	ARL	Index
<p>clg. wt. 4</p> <p>692 mm (27 1/4")</p>	<ul style="list-style-type: none"> • CGC DGL Drywall Suspension System • 15.9 mm (5/8") GRAND PRIX FIRECODE C Core Gypsum Base <ul style="list-style-type: none"> – joints finished – min 25 mm (1") roof insul and 16 mm (5/8") gypsum board on steel deck • 1 hr. rating based on assembly with 12.7 mm (1/2") SHEETROCK FIRECODE C Core Gypsum Panels – steel bar joists • optional veneer plaster 	UL Des P510			SA920	39

Structural Fireproofing

Column



2 Hour Fire-rated Construction				Reference	
Construction Detail	Description	Test Number	Comments	ARL	Index
	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs at column corners joints finished optional veneer plaster 	ULC Des X521 or UL Des X521	Structural member tested: W14 x 228	SA920	40
	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base double layer over each flange end 42 mm (1-5/8") 0.5 mm (25 gauge) steel stud joints finished optional veneer plaster 	ULC Des X518 or UL Des X518	Structural member tested: W10 x 49	SA920	41
	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs joints finished optional veneer plaster 	UL Des X524	Varies Rating also applies to tapered or constant-section prefabricated metal building columns	SA920	42
	<ul style="list-style-type: none"> 3.4# self-furring diamond mesh metal lath wrapped around column 25 mm (1") 100-2-100:3 gypsum-perlite plaster or STRUCTO-LITE Plaster perlite aggregate bearing UL Label 	UL Des X402	Structural member tested: W10 x 49	SA920	43
3 Hour Fire-rated Construction					
	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs at col corners joints finished optional veneer plaster 	UL Des X514	Structural member tested: W14 x 228	SA920	44
	<ul style="list-style-type: none"> 12.7 mm (1/2") GRAND PRIX FIRECODE C Core Gypsum Base 42 mm (1-5/8") 0.5 mm (25 gauge) steel studs joints finished optional veneer plaster 	UL Des X515	Structural member tested: W10 x 49	SA920	45

Performance Selector

Structural Fireproofing

Column



3 Hour Fire-rated Construction				Reference	
Construction Detail	Description	Test Number	Comments	ARL	Index
	<ul style="list-style-type: none"> - 3.4# self-furring diamond mesh metal lath wrapped around column • 35 mm (1-3/8") includes scratch coat 0.057 m³ (2 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster; brown coat 0.085 m³ (3 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster 	UL Des X402	Structural member tested: W10x49	SA920	46
4 Hour Fire-rated Construction					
	<ul style="list-style-type: none"> - 3.4# diamond mesh metal furred 13 mm (1/2") from face of column • 48 mm (1-7/8") includes scratch coat 0.057 m³ (2 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster; brown coat 0.057 m³ (2 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster - perlite aggregate bearing UL Label 	UL Des X405	Structural member tested: W10x49	SA920	47
	<ul style="list-style-type: none"> - 3.4# self-furring diamond mesh metal lath • 44 mm (1-3/4") includes scratch coat 0.057 m³ (2 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster; brown coat 0.085 m³ (3 cu. ft.) perlite per 45 kg (100 lbs.) of RED TOP Gypsum Plaster - perlite aggregate bearing UL Label 	UL Des X402	Structural member tested: W10x49	SA920	48

Structural Fireproofing

Beam

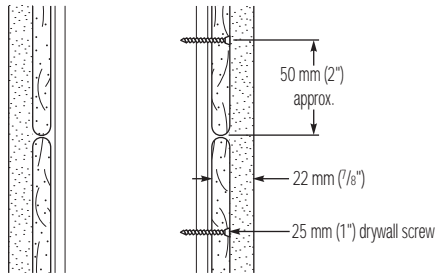
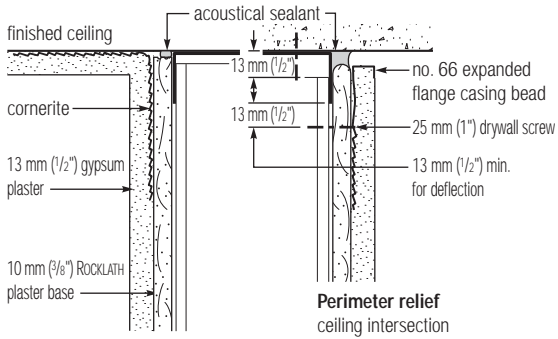


3 Hour Fire-rated Construction				Reference	
Construction Detail	Description	Test Number	Comments	ARL	Index
	<ul style="list-style-type: none"> • 15.9 mm (5/8") SHEETROCK FIRECODE Core Gypsum Panels – 42 mm (1-5/8") steel run channel brackets 610 mm (24") o.c. – 35 x 22 mm (1-3/8" x 7/8") corner angles attached to channel brackets – joints finished – 64 mm (2-1/2") concrete deck on fluted steel floor • optional veneer plaster 	ULC Des 0503 or 0504 or UL Des N501 or N502	Structural member tested: W8 x 24 (beam only)	SA920	49
3 Hour Fire-rated Construction					
	<ul style="list-style-type: none"> – 42 mm (1-5/8") steel run channel brackets 610 mm (24") o.c. – 22 x 35 mm (7/8" x 1-3/8") corner angles att to brackets • 15.9 mm (5/8") GRAND PRIX FIRECODE Core Gypsum Base – 25 mm (1") 0.8 mm (20 gauge) hex mesh on bottom over middle layer – joints finished – 64 mm (2-1/2") concrete deck on fluted steel floor 	UL Des N505	Structural member tested: W8 x 24 (beam only) Fire rating for restrained assembly; 2 hr rating for unrestrained assembly	SA920	50
4 Hour Fire-rated Construction					
	<ul style="list-style-type: none"> – 3.4# self-furring diamond mesh metal lath enclosing beam • 38 mm (1-1/2") of 0.057 m³ (2 cu. ft.) perlite per 45 kg (100 lbs.) RED TOP Gypsum Plaster 	UL Des D403	Structural member tested: W12 x 58 Suitable for protection of beams and girders	SA920	51

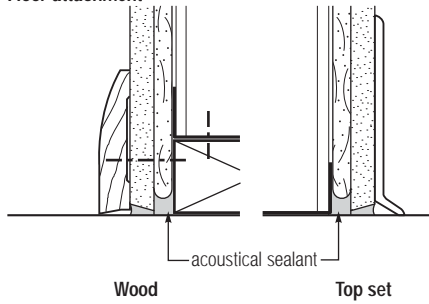
Design Details

Conventional Plaster Systems

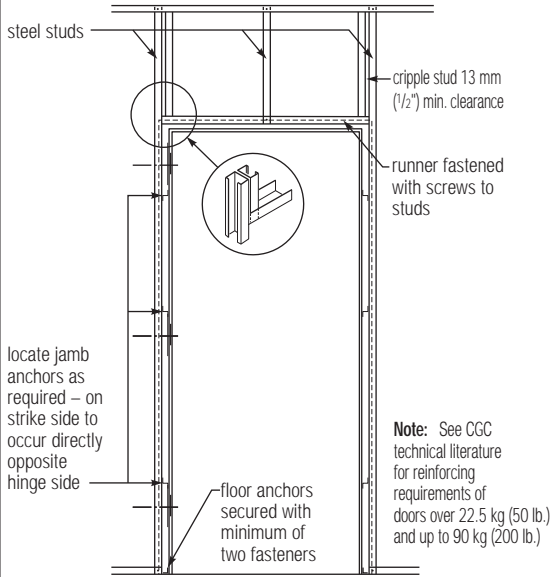
Ceiling Attachment



Floor attachment

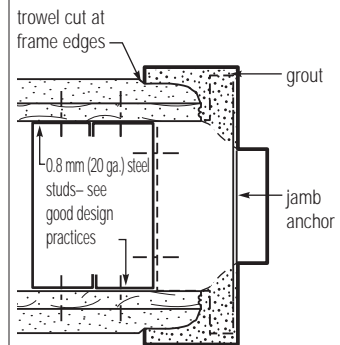
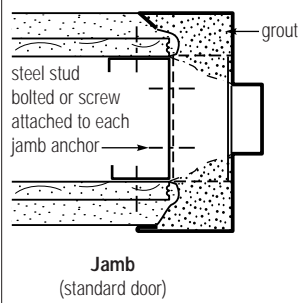
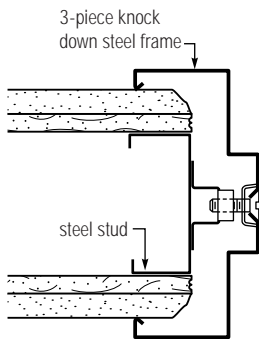


Steel Door Frame



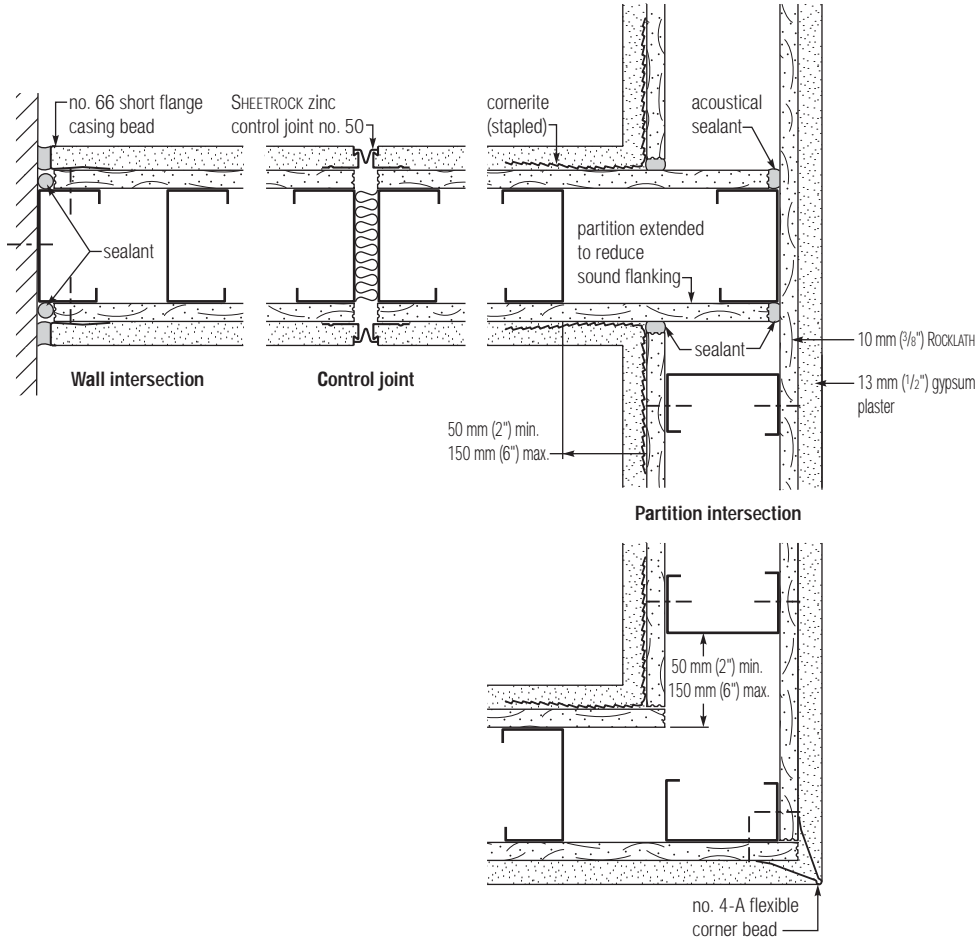
Elevation

Jams – Standard Doors

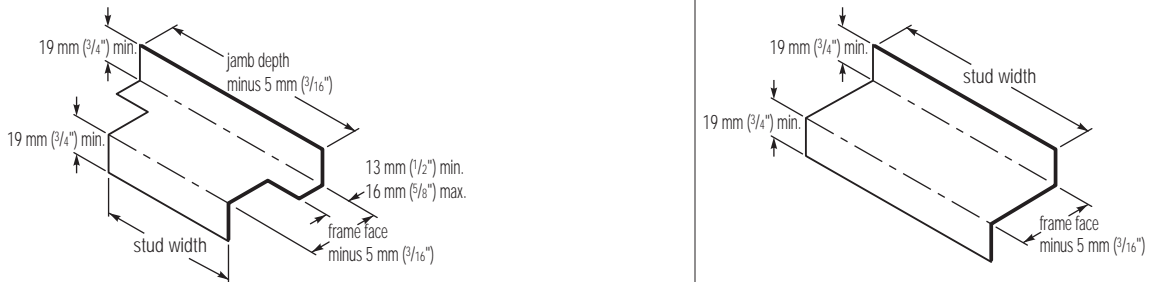


Conventional Plaster Systems

Wall Intersection – Control Joint – Partition Intersection



Jamb Anchors

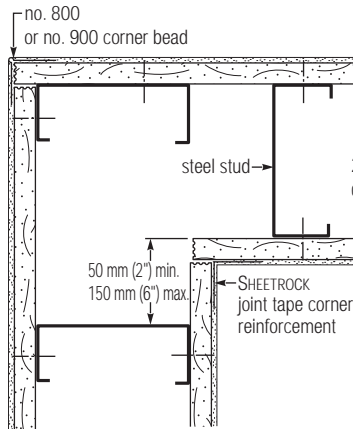


Design Details

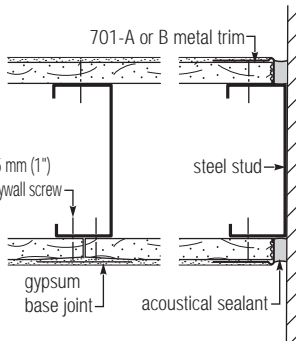
Veneer Plaster Systems

Wall Plan

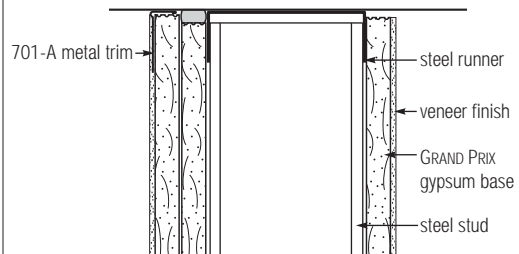
Partition corner



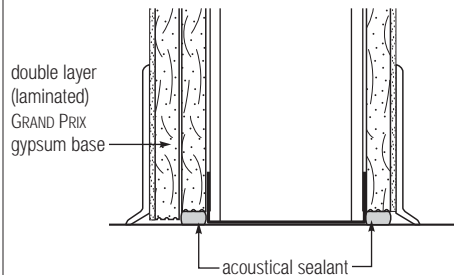
Intersection



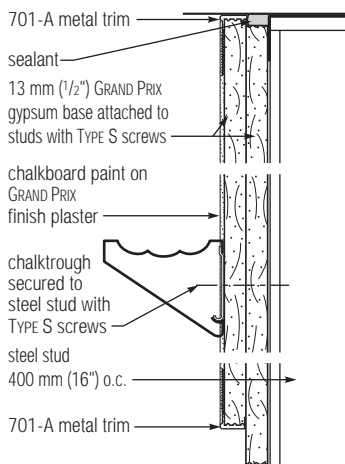
Ceiling Attachment



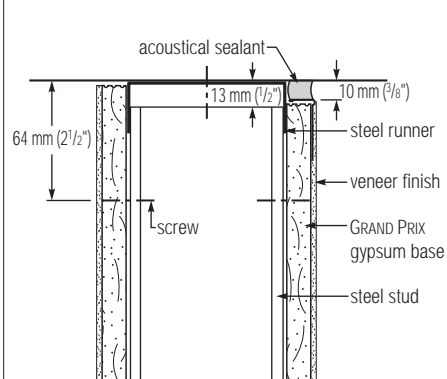
Floor attachment



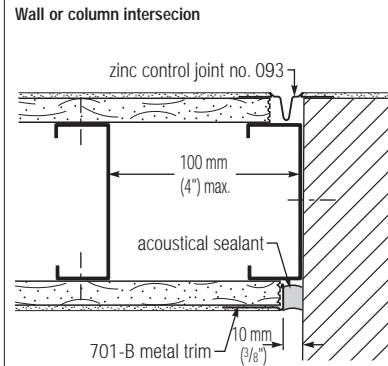
Plaster Chalkboard



Perimeter Relief – Ceiling Intersection

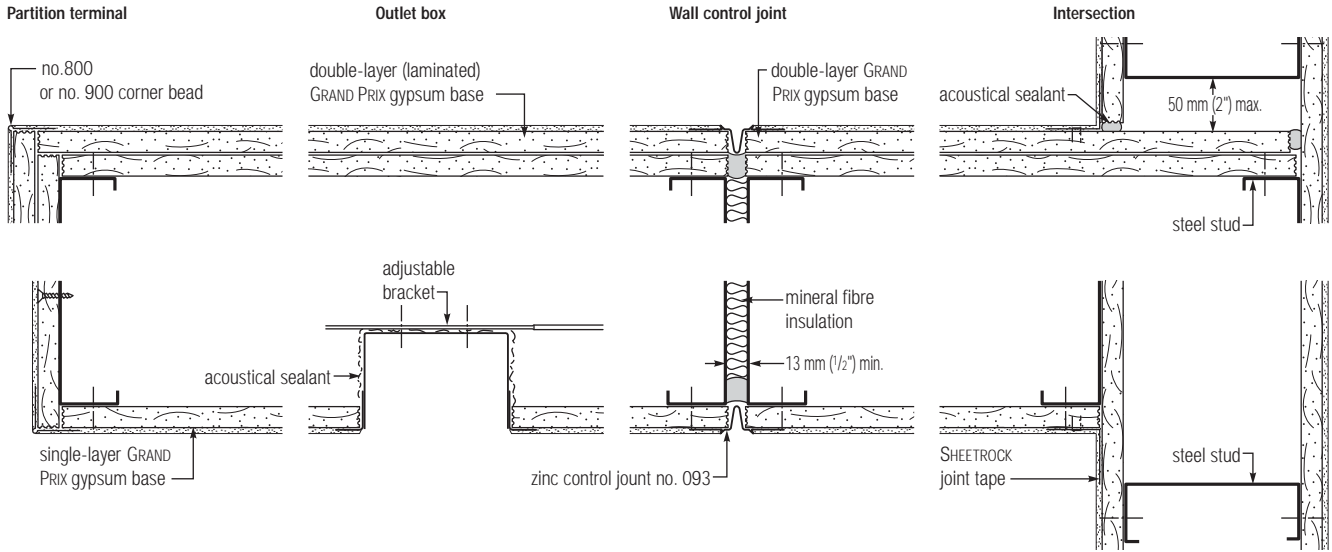


Perimeter Relief and Control Joint

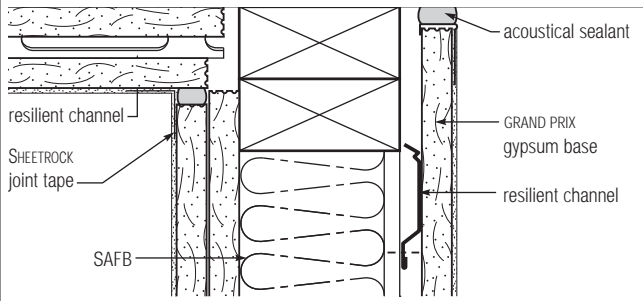
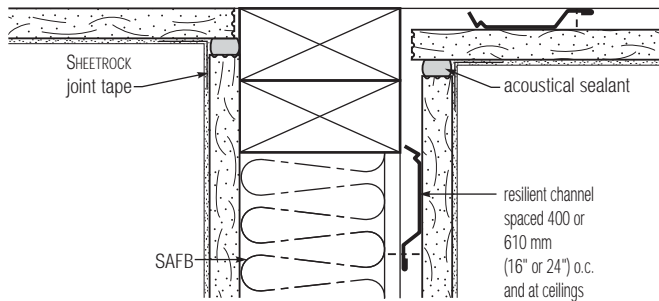


Veneer Plaster Systems

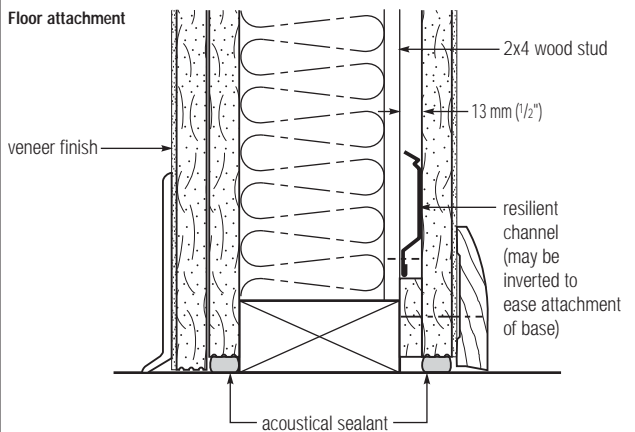
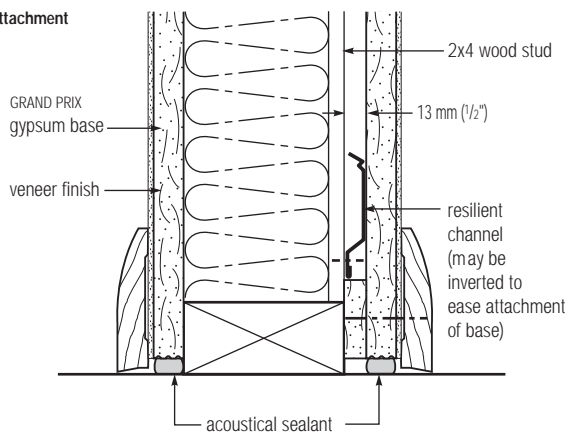
Wall Plan Sections



Ceiling Attachment



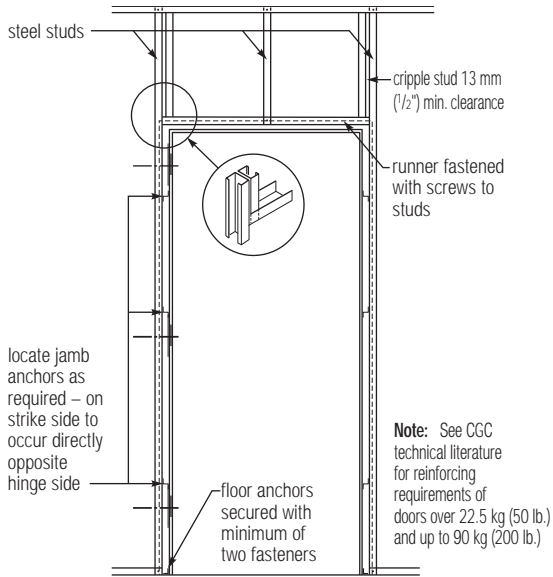
Floor attachment



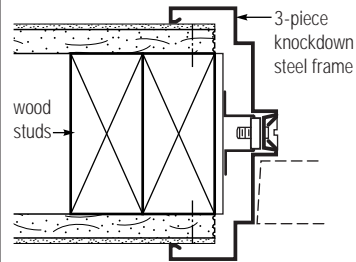
Design Details

Veneer Plaster Systems

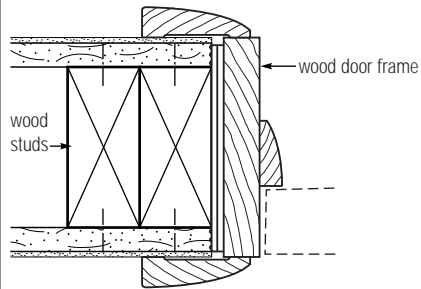
Steel Door Frames – Elevation



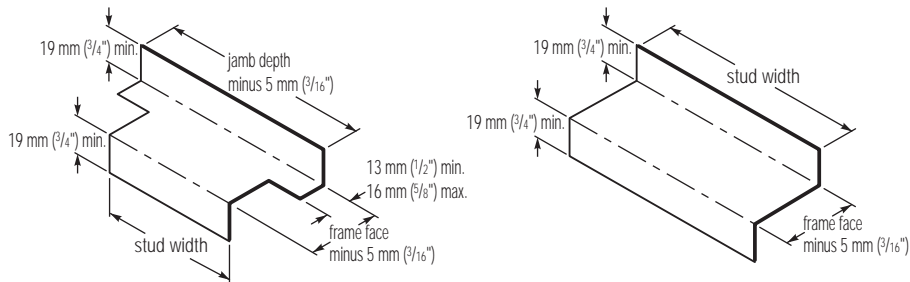
Steel Door Frame



Wood Door Frame

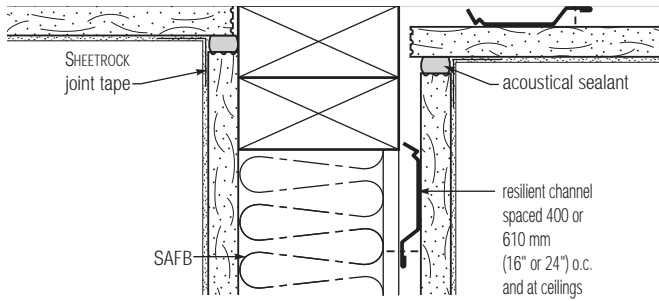


Jamb Anchors – Furnished with Frame

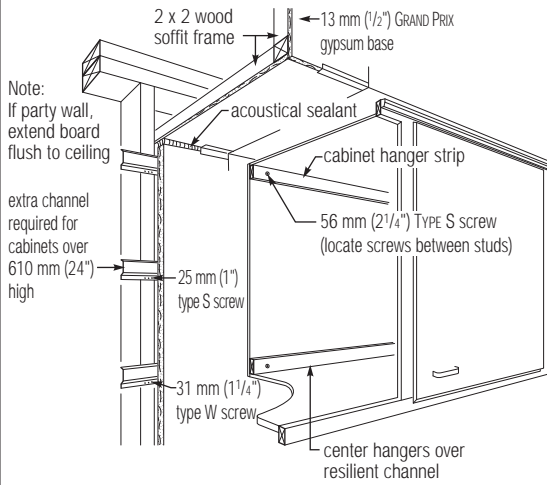
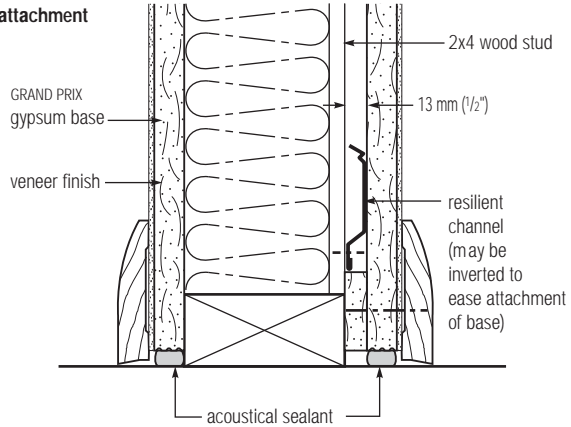


Veneer Plaster Systems

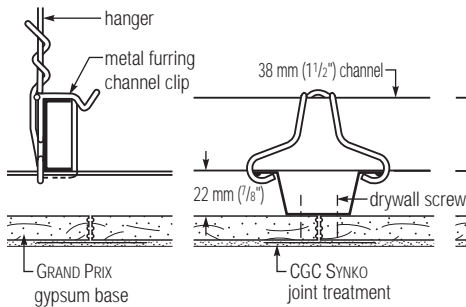
Ceiling Attachment



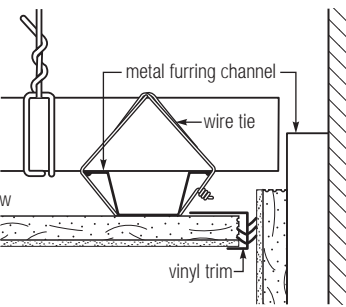
Floor attachment



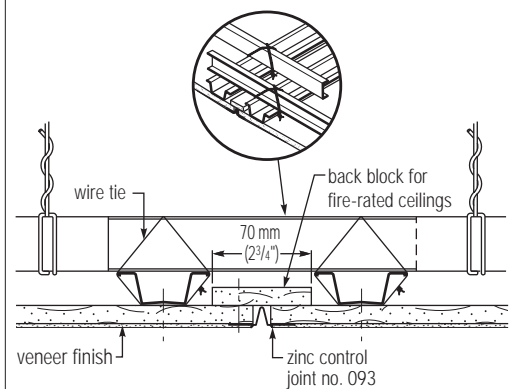
Grillage Suspension



Wall Intersection



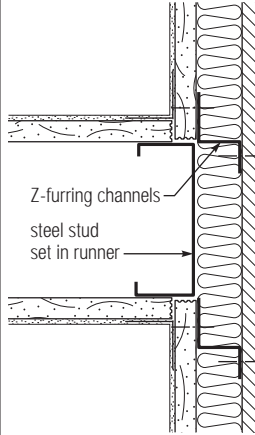
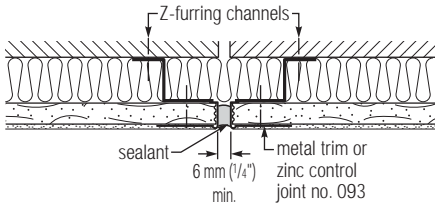
Control Joint



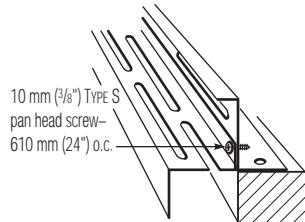
Design Details

Veneer Plaster Systems

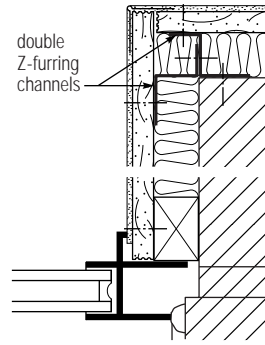
Wall Control Joint



Exterior Corner Framing



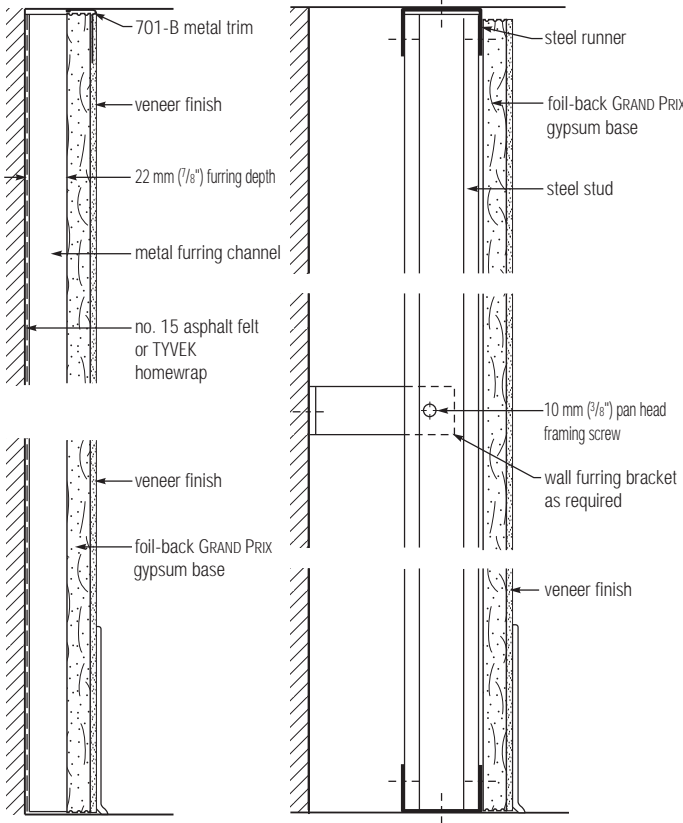
Jamb



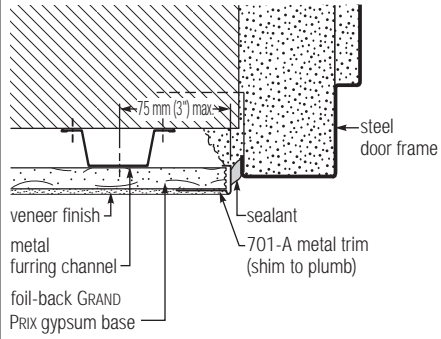
Jamb

Veneer Plaster Systems

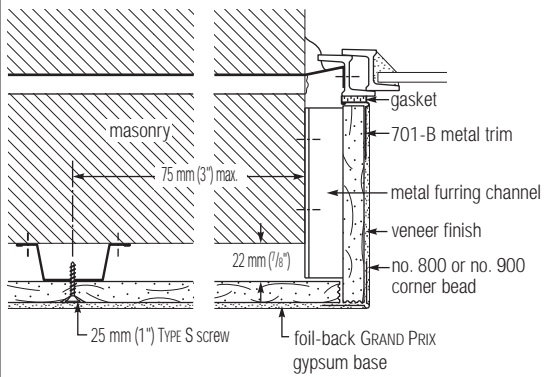
Furring



Jamb – Steel Door Frame

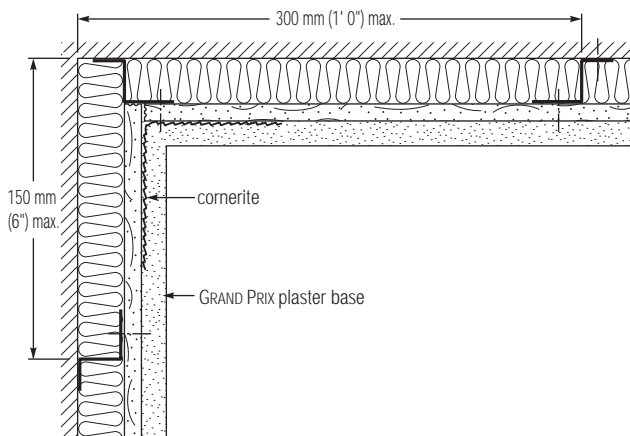


Jamb – Metal Window

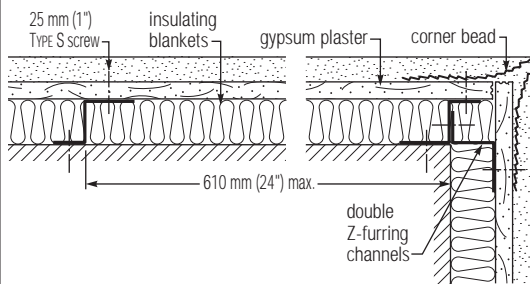


Metal window jamb

Interior Corner



Exterior Corner



Good Design Practices

Use this section as a reference if questions arise about using CGC Plaster Systems.

This section is an overview of good design, application, installation and safety considerations that should be addressed when CGC's products and systems are used. This section outlines some major issues, but is not intended to be a comprehensive review. No attempt is made at completeness.

We recommend that architects and contractors seek the assistance of safety professionals, especially at the professional construction site, because there are many factors to consider that are not included here.

These products must not be used in a design or construction without a complete evaluation by a qualified structural engineer or architect to verify suitability of a particular product for use in the structure. For more information on safety and material handling, please refer to Chapter 13 of *The Gypsum Construction Handbook, Centennial Edition*.

- | | |
|--|--|
| 1 System Performance | CGC Inc. conducts tests on products and systems to meet performance requirements of established test procedures specified by various agencies. Upon written request we will provide test certification for published fire, sound, structural and other pertinent data covering systems designed and constructed according to our published specifications. Substitutions of any of the components are not recommended or supported by CGC Inc. |
| 2 Door and Borrowed-Light Openings | <p>Steel door and borrowed-light frames should be at least 1.4 mm (16 ga.) steel plates welded in trim flanges, with provision for two power-driven anchors or equal per plate. Jamb anchors should be 1.1 mm (18 ga.) steel welded in jamb. Stud reinforcing described below is screw-attached to jamb anchors. Three-piece frames may also be used with these partitions provided end of partition floor runner is anchored with two suitable fasteners.</p> <p>For standard doors up to 900 mm (3'0") wide weighing not more than 45 kg (100 lbs.), 0.5 mm (25 ga.) steel studs and runners may be used for framing the opening. For doors 800 to 1200 mm (2'8" to 4'0") wide (90 kg (200 lbs.) max.), rough framing should be 0.8 mm (20 ga.) studs (92 mm (3-5/8") min.) and runners. For heavy doors up to 1200 mm (4'0") wide (135 kg (300 lbs.) max.), two 0.8 mm (20 ga.) studs should be used. For doors over 1200 mm (4'0") wide, double doors and extra-heavy doors (over 135 kg (300 lbs.)), framing should be specially designed to meet load conditions.</p> <p>Full grouting of door frames is always recommended and is required where heavy or oversize doors are used. As a grout, use 100:2 RED TOP Gypsum Plaster/sand mix, adding enough water so that the material is stiff but workable. Under no conditions should the lath and plaster terminate against the trim of the door frame.</p> |

Spot grouting for standard doors and openings or where specified is recommended as a minimum to full grouting. To spot grout, apply job-sanded RED TOP Gypsum Plaster, STRUCTO-LITE Gypsum Plaster or DURABOND Setting-Type Joint Compound mixed in accordance with bag instructions to each jamb anchor, filling the inside face of the jamb at each point. Immediately insert plaster base into the jamb and attach to framing. Do not terminate base against the trim.

Grouting of tube-type frames or exterior door frames is not recommended at any time, as grout is unable to dry properly and may cause metal frames to rust.

3 Ceilings

Spacing of hangers and channels is designed to support only the dead load. Heavy concentrated loads should be independently supported. Lighting fixtures or troffers, air vents, and other equipment should be separately supported from the ceiling grid or structure above; gypsum base will not support these items.

To prevent objectionable sag in new gypsum base ceilings, the weight of overlaid unsupported insulation should not exceed 6.5 kg/m² (1.3 psf) for 13 mm (1/2") thick base with frame spacing 610 mm (24") o.c.; 11.0 kg/m² (2.2 psf) for 13 mm (1.2") base on 400 mm (16") o.c. framing and 16 mm (5/8") base on 400 mm (24") o.c. framing. Foil-back base or a separate vapor retarder should be installed in all roofed ceilings if required by design, and the plenum or attic space vented with a ratio of 1:300 (Net free area: Horizontal surface area).

4 Control Joints

Compensation must be made for dimensional changes in wall and ceiling surfaces caused by changes in temperature and humidity. Location of control joints is the responsibility of the design professional/architect.

Gypsum base assemblies should be isolated with control joints or by other means where: (a) partition or furring abuts a structural element (except floor) or dissimilar wall or ceiling; (b) ceiling abuts a structural element, dissimilar wall, partition or other vertical penetration; (c) construction changes within the plane of the partition or ceiling; (d) partition or furring run exceeds 9 m (30'); (e) ceiling dimensions exceed 15 m (50') in either direction with perimeter relief, 9 m (30') without relief; (f) expansion or control joints occur in the base exterior wall.

Ceiling height door frames may be used as control joints. Less-than-ceiling height frames should have control joints extending to ceiling from both corners.

093 Zinc Control Joints, when properly insulated or backed by gypsum board, have been fire-endurance tested and are certified for use in one- and two-hour fire-rated walls.

Refer to PM17, *Preventing Cracks in Veneer and Conventional Plaster Systems*, for complete information.

5 Penetrations

Penetrations of the lath-and-plaster diaphragm such as borrowed lights, access panels and light troffers, require additional reinforcement at corners to distribute concentrated stress if a control joint is not used.

6 Plaster/Metal Interface

Where a plaster surface is flush with metal, metal bucks, metal windows or metal base, the plaster should be trowel-cut between the two materials.

7 Pipe and Conduit Chase

Additional chases can be provided in steel studs (except in fire-rated construction) by cutting round holes up to 3/4 of stud width, spaced 300 mm (12") apart.

Good Design Practices

8	Ceramic Tile	GRAND PRIX Gypsum Base is not recommended as a base for the adhesive application of ceramic tile and plastic-faced panels. FIBEROCK AQUA-TOUGH Tile Backerboard or DUROCK Cement Board is recommended for this use. Double-layer panels are required for resilient systems. Refer to SA934, <i>Moisture-Resistant Assemblies</i> , and SA927, <i>Gypsum Panels and Accessories</i> .
9	Fixture Attachment	Lightweight fixtures and trim should be installed with toggle bolts or hollow wall anchors inserted in the base, and, preferably, also through the stud. Wood or metal mounting strips for cabinets and shelving should be bolted to stud framing.
10	Zinc Alloy Accessories	Recommended where corrosion due to high humidity or saline content of aggregate is possible. Metal lath, control joints and other metal accessories, including zinc-alloy accessories, should not be used with magnesium oxychloride cement stucco or portland cement stucco containing calcium chloride additives.
11	Joint Treatment	For steel frame systems, SHEETROCK or DURABOND Setting-Type Joint Compound and SHEETROCK Joint Tape must be used on all joints and internal corners and allowed to set and dry before veneer plaster application. See PM5, <i>Veneer Plaster Joint Reinforcement Systems</i> , for complete information.
12	Decorating	<p>Plaster systems must be completely dry before decoration.</p> <p>Do not specify polyvinyl acetate (PVA) primers for application to plaster finishes containing lime. In the presence of moisture, these primers can cause bond loss with resultant paint delamination and job failure.</p> <p>Caution should be used in selection and use of epoxy-based finish systems over lime putty/gauging plaster and lime-containing finish plasters as these high-strength coating systems create a significant degree of surface stress at the coating/plaster interface. Use of a penetrating primer/sealer is required to adequately enhance and fortify the plaster surface when such finish coating systems are used. In all cases, the paint manufacturer should be consulted in selection and final application procedures.</p> <p>Veneer—Painting or further decoration of all plaster finishes is recommended and should be specified. However, in many residential applications, DIAMOND Interior Finish provides a uniform white colour and may satisfy a job's specific acceptance specifications when textured and left undecorated. IMPERIAL Finish Plaster and DIAMOND Interior Finish Plasters, if completely dry, may be painted the day after application with acrylic, latex or vinyl-breather-type paints.</p> <p>Conventional—Gauged-lime putty and RED TOP Finish applied over conventional basecoat plasters must age 30 days and be thoroughly dry and properly sealed before decorating. Quick-drying vinyl acrylic latex or alkali-resistant alkyd primer-sealers are recommended.</p>
13	Sound Control	Sound tests are conducted under ideal laboratory conditions per ASTM procedures. Comparable field performance depends on building design and careful attention to detailing and workmanship. Where these partitions are used for sound control, seal the partition perimeter with 6 mm (1/4") min. round bead of acoustical sealant. Seal around all cutouts for lights, cabinets, pipes, ducts and electrical boxes. Back-to-back penetrations of the diaphragm, flanking paths and door and borrowed-light openings should be avoided. Where sound isolation is the primary consideration, only sand-aggregated basecoat plasters should be used.

14	Shadowing and Spotting	<p>Temperature differentials on the interior surface of exterior walls may result in collection of airborne dirt on the colder surface areas. Consequently, accumulated dirt in the form of shadowing and spotting may occur at locations of fasteners or framing where surface temperatures usually are lowest. This is a natural phenomenon which occurs through no fault of the products.</p> <p>Where temperature, humidity and soiling conditions are expected to cause objectionable shadowing and spotting, one of the following alternatives should be considered:</p> <ul style="list-style-type: none"> A. The interior facing of GRAND PRIX Foil-Back Gypsum Base should be furred from the exterior wall studs using a base layer of panels screw-attached to the studs and horizontally applied metal furring channels spaced 610 mm (24") o.c. B. On exterior masonry walls, install rigid or semi-rigid insulation between Z-Furring Channels affixed to interior side of wall and finish with GRAND PRIX Foil-Back Gypsum Base. C. For maximum resistance to shadowing and spotting, a separate free-standing wall construction is recommended using studs that are independent of the exterior wall.
15	High-Rise Buildings	<p>Variable wind pressure can cause a structure to drift or sway. This can result in movement of the non-loadbearing partitions, causing noise. CGC Inc. assumes no responsibility for the prevention, cause, or repair of these job-related noises.</p>
16	Note	<p>CGC Inc. reserves the right to make changes or improvements in the design of all catalogued items without notice and without obligation to incorporate these changes or improvements in items already manufactured.</p>
17	Specifications	<p>The following are minimum basic guides for preparation of job specifications. They are prepared for normal construction and are not intended to cover every possible design or job condition. Specific product data sheets are available from CGC Inc. for additional details and plaster specifications. Requests for these publications can be directed to the local sales offices identified on the last page of this brochure.</p>
18	Additional Information	<p>See SA100, <i>Fire-Resistant Assemblies</i>, for fire- and sound-rated systems; SA933, <i>Aesthetic Assemblies</i>, for texturing specifications; SA934, <i>Moisture-Resistant Assemblies</i>; and SA927, <i>Gypsum Panels and Accessories</i>, for information on gypsum panels; and for information on moisture-resistant panels and boards.</p>

Application Guide

Specifications

This guide is provided to assist you in specification of CGC Plaster Systems. If you have additional questions or would like more information regarding this or other CGC products and systems, please contact CGC at 800.387.2690.

Part 1: General

1.1 Scope	Specify areas to receive this treatment.
1.2 Qualifications	<p>All materials described in this publication manufactured by or for CGC Inc. shall be installed in accordance with its current printed directions.</p> <p>Warning: Store all GRAND PRIX Gypsum Base, FIBEROCK Panels and DUROCK Cement Board flat. Panels are heavy and can fall over, causing serious injury or death. Do not move unless authorized.</p>
1.3 Delivery and Storage of Materials	All materials, except water and sand, shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.
1.4 Environmental Conditions	<ol style="list-style-type: none">1. In cold weather, all glazing shall be completed and the building heated to a minimum of 13 °C (55 °F) before gypsum base and lath installation. Temperature of building shall be maintained in uniform range above 13 °C (55 °F) for an adequate period prior to application of plaster, while plastering is being done, and until plaster is dry. Heat shall be well distributed in all areas, with deflection or protective screens used to prevent concentrated or uneven heat distribution on plaster near source.2. Ventilation and air circulation shall be kept to a minimum level during veneer plastering until the plaster has set and completely dried.3. Ventilation shall be provided to properly dry conventional plaster during and subsequent to its application. In glazed buildings, this shall be accomplished by keeping windows open sufficiently to provide air circulation; in enclosed areas lacking normal ventilation, provisions must be made to mechanically remove moisture-laden air.4. If glazed sashes are not in place and the building is subject to hot, dry winds or temperature differentials from day to night of 11 °C (20 °F) or more, openings shall be screened with cheesecloth or similar material.
1.5 Protection	Proper protection shall be provided during plastering for finished door and window frames and other designated areas that do not receive a plaster finish.
1.6 Basecoat Plaster General Limitations	<ol style="list-style-type: none">1. With application over interior monolithic concrete, surface must first be treated with an application of CGC Plaster Bonder.2. Basecoat surface must be serrated or broomed to roughen and open the surface to allow for proper suction and to develop proper bond of the finish coat to the basecoat.3. Gypsum plasters should not be used where they will come in contact with water or excessive moisture. May be applied to exterior soffits protected from direct exposure to rain and moisture. Suitable drips and casings along the edges are required.4. Plaster application is not recommended over bituminous compounds or other waterproofing agents.5. Interior surface of exterior masonry or monolithic concrete walls shall be furred and lathed prior to plastering.

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6. STRUCTO-LITE Gypsum Plaster or basecoat plasters containing job-mixed lightweight aggregate require a lime-gauging finish plaster containing a fine aggregate to control surface cracking.
 7. Lightweight basecoat plasters shall not be specified over metal lath when smooth trowel finish is required.
 8. General practice dictates that there should be a lower sand-to-gypsum plaster ratio in the scratch coat than in the brown coat.

**1.7
Veneer Plaster
Systems
Limitations**

1. Application thickness for veneer basecoat, veneer finishing, gauging-lime or factory-prepared gauging-lime finish plasters is 1.5 - 2.4 mm (1/16" - 3/32").
 2. Rapid drying conditions, steel framing and certain framing situations on 610 mm (24") o.c. require use of paper tape and setting-type compound.
- A. Substrates**
1. Ceramic tile should not be attached directly to veneer base; plaster must be applied first.
 2. Foil-backed base should not be used as a substrate for ceramic tile, or as the face layer in multilayer systems.
 3. Masonry substrate must be clean, porous, with joints struck flush, and may need to be dampened to control excess suction. A two-coat system is required over masonry.
 4. Monolithic concrete must be clean, fully cured, and free of oils, efflorescence and other foreign materials. CGC Plaster Bonder must be applied prior to plaster application.
 5. Sunfaded GRAND PRIX Gypsum Base should be treated with CGC Plaster Bonder before plaster application when applying DIAMOND Interior Finish Plaster.
- B. Basecoats**
- May be applied directly to porous unit masonry or over cured monolithic concrete treated with CGC Plaster Bonder. Once the basecoat is applied and has become firm, the surface shall be raked or broomed to provide a rough, open surface necessary for proper suction and finish coat bond.
- C. Veneer Finishes**
1. Single coat veneer plaster finishes are not recommended for use over portland cement basecoats or unit masonry construction.
 2. Only job-sanded DIAMOND Interior Finish Plaster is recommended for electric heat cables. When job-sanded DIAMOND Interior Finish Plaster is used for a radiant heat system, the cable-sheath operating temperatures must not exceed 52 °C (125 °F).

**1.8
Finish Coat Plaster
General Limitations**

1. Lime gauging finishes are not recommended for smooth application over lightweight aggregate gypsum basecoat applied over metal lath. Only sand-float finishes are recommended over metal lath.
2. Where the gypsum basecoat contains lightweight aggregate (perlite or vermiculite), the finish coat should be:
 - a) (RED TOP) factory-aggregated gauging plaster, or
 - b) RED TOP Gauging Plaster and lime with addition of 0.014 m³ (1/2 cu. ft.) of perlite fines per 45 kg (100 lbs.) gauging plaster, or
 - c) RED TOP Gauging Plaster and lime with addition of 22.5 kg (50 lb.) of No. 1 white silica sand per 45 kg (100 lbs.) gauging plaster.
3. Gypsum and lime-based finishes, should not be used directly over a portland cement basecoat or over concrete block or other masonry surfaces.

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4. Gauged-lime putty and RED TOP Finish applied over conventional basecoat plasters must age 30 days, be thoroughly dry and properly sealed before decorating. Quick-drying vinyl acrylic latex or alkali-resistant alkyd paints and primer-sealers are recommended.
5. Primers containing polyvinyl acetate (PVA) are not recommended and should not be specified for use with any plaster finish with the exception of IMPERIAL Finish Plaster. PVA primers can cause bond loss with resultant paint delamination and job failure when used over lime containing plasters. Strictly follow the specific product recommendations of paint manufacturers for painting lime-gauging putty finishes.

1.9 Gypsum Plaster Lath Limitations

1. Maximum frame spacing for 10 mm (3/8") GRAND PRIX Plaster Base should not exceed 400 mm (16") o.c.
2. For general information on steel framing, consult SA100, *Fire-Resistant Assemblies*.
3. Shall be used with gypsum plasters only. Lime-based plaster and portland cement plaster are incompatible with USG ROCKLATH Plaster Base and shall not be specified.
4. Shall not be used in areas with sustained high relative humidity or where exposed to excessive moisture for extended periods. (Galvanized metal lath and portland cement-lime plaster or a DUROCK Cement Board System is recommended for wet areas. See SA700, *Exterior System Substrates*, and SA934, *Moisture-Resistant Assemblies* for more information.)

1.10 Metal Lath General Limitations

1. Metal lath products shall not be used with magnesium oxychloride cement stuccos or stuccos containing calcium chloride additives.
2. In ceiling assemblies, a min. of 323 sq.mm (1/2 sq. in.) net free vent area is recommended 0.09 sq. m (per sq. ft.) of horizontal surface in plenum or other space required.

1.11 Wood-Framed Veneer Plaster Systems Limitations

1. These constructions should not be used where normally exposed to excessive moisture, humidity or temperature.
2. TYPE S screws must be used for attachment of single-layer base to resilient channels.
3. Resilient channels must be attached to wood framing only with 38 mm (1-1/2") Type W screws. Nails should not be used.
4. Resilient ceilings should not be installed beneath highly flexible floor joists.
5. SHEETROCK Joint Tape and SHEETROCK Setting-Type Lightweight or DURABOND Setting-Type Joint Compound must be used to treat all joints and internal angles when any of the following conditions exist: rapid drying conditions due to low humidity, high temperature, and excessive evaporation, or 610 mm (24") o.c. wood frame spacing and a single layer gypsum base veneer system is specified (16 mm (5/8") base with one-coat veneer finish and 13 or 16 mm (1/2" or 5/8") base with two-coat veneer finish). Allow joint treatment to set and dry thoroughly before plaster application.
6. To prevent fastener popping, GRAND PRIX Plaster Base should be attached with fasteners driven flush with the surface, and not dimpled.

1.12 Steel-Framed Veneer Plaster Systems Limitations

1. Non-loadbearing.
2. These assemblies should not be used where exposed to excessive moisture, humidity or temperature.
3. Maximum frame spacing, and steel stud/runner structural properties limiting heights should not be exceeded. Consult stud manufacturer's tables and structural properties to determine final stud selection.
4. Select limiting heights and deflections for steel-framed veneer plaster systems as follows:
 - a) L/240 for veneer plaster systems
 - b) L/360 for conventional plaster systems and other brittle surface materials

- c) L/360 is recommended in specific critical areas such as for tall walls, walls with full or partial height tile, and walls receiving eccentric loading (e.g., shelving on one side)
5. Joints must be finished using SHEETROCK Joint Tape and SHEETROCK or DURABOND Setting-Type Joint Compound. Joint compound must be allowed to set before plaster application.
 6. Control joints are required; refer to Good Design Practices, No. 4.

Part 2: Products

2.1 Framing, Furring, and Accessories

- A. Steel Studs**
0.5 mm (25 ga.) (42 mm (1-5/8")), (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")), 0.76 mm (22 ga.) (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")), 0.8 mm (20 ga.) (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")).
- B. Steel Runners**
0.5 mm (25 ga.) (42 mm (1-5/8")), (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")), 0.76 mm (22 ga.) (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")), 0.8 mm (20 ga.) (64 mm (2-1/2")), (92 mm (3-5/8")), (100 mm (4")), (150 mm (6")).
- C. Lathing Channels**
Cold-Rolled Channels (19 mm (3/4")), (38 mm (1-1/2")), (50 mm (2")) (ptd, galv).
- D. Furring Channels**
Metal Furring Channels (DWC-25) (DWC-20) Z-Furring Channels (25 mm (1")), (38 mm 1-1/2"), (50 mm 2"), (75 mm 3")).
- E. Resilient Channels**
Resilient Channel.
- F. Metal Angles**
Galvanized Metal Angles (35 x 22 mm (1-3/8" x 7/8")) (64 x 64 mm (2-1/2" x 2-1/2")).

2.2 Veneer Plaster Base

- A. GRAND PRIX Gypsum Base**
(13 mm (1/2")) (16 mm (5/8")) (19 mm (3/4")) thick, 1200 mm (48") wide, square edge, (Regular) (FIRECODE) (FIRECODE C) (Abuse Resistant) (ULTRACODE Core), (Foil-Back).
Note: Specify only with veneer plaster, No. 800 or No. 900 Corner Bead and IMPERIAL Joint Reinforcement Tape (Type P) (Type S) or SHEETROCK Joint Tape and SHEETROCK or DURABOND Setting-Type Joint Compound.
- B. DUROCK Cement Board**
(13 mm (1/2")) (16 mm (5/8")) thick, 1200 mm (48") wide.
- C. FIBEROCK Interior AQUA-TOUGH Panels**
(13 mm (1/2")) (16 mm (5/8")) (16 mm (5/8") VHI) thick, 1200 mm (48") wide, tapered edge.

2.3 Plastering and Trim Accessories—Veneer Plaster Systems

- A. Screws**
Size—(10 mm (3/8")) (11 mm (7/16")) (13 mm (1/2")) (25 mm (1")) (31 mm (1-1/4")) (38 mm (1-1/2")) (42 mm (1-5/8")) (50 mm (2")) (56 mm (2-1/4")) (64 mm (2-1/2")) (75 mm (3")); style—(framing, TYPE S or S-12) (drywall, TYPE S) (self-drilling, TYPE S-12) (laminating, Type G) (coarse thread, Type W) (DUROCK); head—(bugle) (pan) (trim) (pancake) (low-profile) (mod. truss head); coating—(reg) (corrosion-resistant Type III coating or better per ASTM B117 (12 hours)
- B. Corner Bead**
No. 800 (for drywall and one-coat veneer plaster) No. 900 (for two-coat veneer plaster) Flexible Corner Bead (for archways and curved designs).

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- C. Trim**
No. 701-A (J-Type) No. 701-B (L-Type) (for two-coat veneer plaster) No. 801-A, No. 801-B (for one-coat veneer plaster).
- D. Zinc Control Joint**
No. 093 Control Joint.
- E. Joint Reinforcement**
SHEETROCK Joint Tape, SHEETROCK or DURABOND Setting-Type Joint Compound (for use over steel framing and when rapid drying conditions exist) _____ Veneer Plaster (specify from product descriptions) and (50 mm (2")) (64 mm (2-1/2")) IMPERIAL Tape (Type P) (Type S) (to embed tape over wood framing).
- F. Clip**
Metal Furring Channel Clip.
- G. Furring Brackets**
Adjustable Wall Furring Brackets.
- H. Wire**
Hanger Wire (3.3 mm (8 ga.)) Tie Wire (1.1 mm (18 ga.)).
- I. Caulking**
Acoustical Sealant.
- J. Laminating Adhesive**
SHEETROCK DURABOND Setting-Type Joint Compound.
- K. CGC Plaster Bonder**
- L. CGC ACRI-Add™ 100% Acrylic Add-Mix Fortifier**

2.4 Plastering Material— Veneer Plaster Systems

- A. Veneer Plaster Basecoat**
IMPERIAL Basecoat Plaster, DIAMOND Veneer Basecoat Plaster.
- B. Veneer Plaster—Prepared Finish**
IMPERIAL Finish Plaster, DIAMOND Interior Finish Plaster, RED TOP Finish.
- C. Finish Lime**
SNOWDRIFT (type S); RED TOP, (type N).
- D. Gauging Plaster**
RED TOP Gauging.
- E. Grout**
Job-sanded RED TOP Gypsum Plaster, STRUCTO-LITE Gypsum Plaster, DURABOND Setting-Type Joint Compound.
- F. Water**
Potable without impurities that affect the setting of gypsum.
- G. Special Plasters**
CGC Moulding Plaster, White HYDROCAL Gypsum Cement.

2.5 Mixes—Veneer Plaster

- A. Veneer Plaster Basecoat**
_____ shall be mixed in accordance with water proportions identified on bag. Mix for 2 to 5 minutes with a cage-type paddle mixer using a 900-1000 rpm 13 mm (1/2") drill.

B. Veneer Plaster—Prepared Finish

Add all but 1 to 2 litres of the required water to a non-plastic mixing container. Mix for 1 to 2 minutes, add up to 1 to 2 litres of retained water and then mix for 1 to 2 minutes more. Mix with a cage-type paddle mixer using a 900-1000 rpm 13 mm (1/2") drill. (See PM19.)

C. Conventional Plasters over a Veneer Basecoat

1. SNOWDRIFT Lime: Shall be machine-mixed for immediate use with approx. 20-24 litres water per 22.5 kg (50 lb.) bag.
2. RED TOP Lime: Shall be box-soaked or machine-mixed using approx. 24 litres water per 22.5 kg (50 lb.) bag, and allowed to soak for 16 hours.
3. Finish Plaster: Shall be mixed in proportion by dry weight of _____ parts of gauging to _____ parts of lime (specify from coverage data), according to applicable bag directions. Over lightweight aggregate basecoats (such as STRUCTO-LITE Gypsum Plaster) add 0.014 m³ (1/2 cu. ft.) of perlite fines or 22.5 kg (50 lbs.) of No. 1 silica sand per 45 kg (100 lb.) of gauging plaster or use mill-aggregated "quality" gauging plaster.

**2.6
Conventional Plaster
Lathing Materials**

A. GRAND PRIX Plaster Base

(12 x 1220 x 2440 mm (1/2" x 48" x 96")).

B. Metal Lath

Diamond Mesh Lath (0.94, 1.34, 1.82 kg/m² (1.75, 2.5, 3.4)) lb., (ptd, galv); Self-Furring Diamond Mesh Lath (1.34, 1.82 kg/m² (2.5, 3.4)) lb., (ptd, galv), (Paper-Backed—Grade B or Grade D), Flat Riblath (1.34, 1.82 kg/m² (2.75, 3.4)) lb., (ptd, galv), 10 mm (3/8") Riblath (1.82 kg/m² (3.4)) lb., (ptd, galv).

**2.7
Lathing Accessories—
Conventional
Plaster Systems**

A. Screws

Select from listing in 2.3 A (above).

B. Corner Bead

1-A Expanded, Double-X.

C. Casing Beads

Casing Bead #66 Expanded Flange (6 mm, 10 mm, 13 mm, 16 mm, 19 mm, 22 mm, 25 mm, 31 mm (1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1-1/4")) (galv, zinc), Casing Bead #66 Short Flange (6 mm, 10 mm, 13 mm, 16 mm, 19 mm, 22 mm (1/4", 3/8", 1/2", 3/4", 7/8")) (galv, zinc).

D. Zinc Control Joint

093 Zinc Control Joint (#50, #75, #100) (zinc), Double-V Expansion Joint (13 mm, 19 mm (1/2", 3/4")) (galv, zinc).

E. Reinforcement

Cornerite, Striplath.

F. Wire

Hanger Wire (3.3 mm (8 ga.)), Tie Wire (1.1 mm (18 ga.)).

**2.8
Plastering Material—
Conventional Plaster
Systems**

A. Basecoat Plaster—Conventional

RED TOP Gypsum Plaster, STRUCTO-LITE Gypsum Plaster.

B. Aggregate

Sand, perlite (meeting ASTM C35) sand for float finishes shall be graded (white) silica sand passing a (30 mesh) (20 mesh) screen.

C. Finish Lime

SNOWDRIFT (type S); RED TOP (type N).

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- D. Gauging Plaster**
RED TOP Gauging.
- E. Grout**
RED TOP Gypsum Plaster, job-sanded, STRUCTO-LITE Gypsum Plaster, SHEETROCK DURABOND Setting-Type Joint Compound.
- F. Water**
Potable without impurities that affect the setting of gypsum.
- G. Special Plasters**
CGC Moulding Plaster, White HYDROCAL Gypsum Cement.
- H. Portland Cement**
Type 1 or 2, per ASTM C926.

2.9 Mixes— Conventional Plaster

- A. Basecoat Plaster—Conventional**
Basecoat plaster and aggregate shall be mixed in proportions of _____ (specify from technical data).
- B. SNOWDRIFT Lime**
Shall be machine-mixed for immediate use with approx. 20-24 litres water per 22.5 kg (50 lb.) bag.
- C. RED TOP Lime**
Shall be box-soaked or machine-mixed using approx. 24 litres water per 22.5 kg (50 lb.) bag, and allowed to soak for 16 hours.
- D. Finish Plaster**
Shall be mixed in proportion by dry weight of _____ parts of gauging to _____ parts of lime (specify from coverage data), according to applicable bag directions. Over lightweight aggregate basecoats (such as STRUCTO-LITE Gypsum Plaster) add 0.014 m³ (1/2 cu. ft.) of perlite fines or (22.5 kg (50 lbs.) of silica sand to meet ASTM C35 per 45 kg (100 lb.)) of gauging plaster or use mill-aggregated “quality” gauging plaster.
- E. Portland Cement**
Mix TYPE S lime (MORTASEAL™ Mason’s Lime) or Type SA lime (BONDCRETE® Lime per ASTM C207) with portland cement and sand according to ASTM C926, Type L mortar; suggested portland cement to lime to sand ratios by volume.
Basecoat: Scratch coat—1:1:8; brown coat—1:1:10.

Part 3: Execution

3.1 Steel Framing and Furring Installation

- A. Partition Framing Installation**
Attach steel runners at floor and ceiling to structural elements with suitable fasteners located 50 mm (2”) from each end and spaced 610 mm (24”) o.c., or to suspended ceilings with toggle or hollow wall anchors spaced 400 mm (16”) o.c.
Position steel studs vertically, engaging both floor and ceiling runners, and spaced max. (400 mm (16”)) (610 mm (24”)) o.c. When necessary, splice studs with 200 mm (8”) nested lap and one positive attachment per stud flange. Place studs in direct contact with door frame jambs, abutting partitions, partition corners and existing construction elements. Where studs are attached to exterior walls and possibility of water penetration through walls exists, install asphalt felt strips between studs and wall surfaces.
Anchor all studs adjacent to door and window frames, partition intersections, corners and free-standing furring to ceiling and floor runner flanges with metal lock fastener tool or screws. Securely anchor studs to jamb and head anchors

of door or borrowed-light frames by bolt or screw attachment. Over metal door and borrowed-light frames, place a cut-to-length section of runner, with a web-flange bend at each end, and secure to strut-studs with two screws in each bent web. Position a cut-to-length stud (extending to ceiling runner) at vertical plaster base joints over door header. When attaching studs to steel grid system, structural adequacy of grid to support end reaction of wall must be determined.

B. Chase Wall Framing Installation

Align two parallel rows of floor and ceiling runners spaced apart as detailed. Attach to concrete slabs with concrete stub nails or power-driven anchors 610 mm (24") o.c., to suspended ceilings with toggle bolts or hollow wall anchors 400 mm (16") o.c., or to wood framing with suitable fasteners 610 mm (24") o.c.

Position steel studs vertically in runners (400 mm (16") (610 mm (24")) o.c., with flanges in the same direction, and with studs on opposite sides of chase directly across from each other. Anchor all studs adjacent to door and window frames, partition intersections and corners to floor and ceiling runner flanges with metal lock fastener tool or screws.

Cut cross bracing made from gypsum base 300 mm (12") high by wall width. Place between rows of studs. Space braces 1200 mm (48") o.c. vertically and attach to stud webs with six TYPE S screws per brace. If larger braces are used, space screws 200 mm (8") o.c. max. on each side. Attach single-layer or base-layer gypsum base with (25 mm (1")) TYPE S screws spaced 300 mm (12") o.c. in field and 200 mm (8") o.c. staggered at joints.

Bracing of 64 mm (2-1/2") steel studs may be used in place of gypsum braces. Anchor web at each end of steel brace with two pan head framing screws. When chase wall studs are not opposite, install steel stud cross braces 610 mm (24") o.c. horizontally and securely anchor each end to a continuous horizontal 64 mm (2-1/2") runner screw-attached to chase wall studs within the cavity.

C. Ceiling Grillage Installation

Space 3.3 mm (8 ga.) hanger wires 1200 mm (48") o.c. along carrying channels and within 150 mm (6") of ends of carrying channel runs. In concrete, anchor hangers by attachment to reinforcing steel, by loops embedded at least 50 mm (2") or by approved inserts. For steel construction, wrap hanger around or through beams or joists.

Install 38 mm (1-1/2") carrying channels 1200 mm (48") o.c., and within 150 mm (6") of walls. Position channels for proper ceiling height, level and secure with hanger wire saddle-tied along channel. Provide 25 mm (1") clearance between runners and abutting walls and partitions. At channel splices, interlock flanges, overlap ends 300 mm (12") and secure each end with double-strand 1.1 mm (18 ga.) tie wire.

Erect metal furring channels at right angles to 38 mm (1-1/2") carrying channels or main support members. Space furring (400 mm (16") (610 mm (24")) o.c. and within 150 mm (6") of walls. Provide 25 mm (1") clearance between furring ends and abutting walls and partitions. Secure furring to carrying channels with clips or saddle-tie to supports with double-strand 1.1 mm (18 ga.) tie wire. At splices, nest furring channels at least 200 mm (8") and wire-tie each end with double-strand 1.1 mm (18 ga.) tie wire.

At light troffers or any openings that interrupt the carrying or furring channels, install additional cross reinforcing to restore lateral stability of grillage.

D. Resilient Channel Installation

Position resilient channel at right angle to steel studs, spaced 610 mm (24") o.c., and attach to steel stud flanges with pan head framing screws driven through holes in channel mounting flange and to wood framing with 31 mm (1-1/4") wood screws of Buildex Type W. Install channel with mounting flange down, except at floor to accommodate attachment. Locate channels 50 mm (2") from floor and within 150 mm (6") of ceiling. Extend channels into all corners and attach to corner framing. Cantilever channel ends no more than 150 mm (6"). Splice channel by nesting directly over framing member. Reinforce with screws located at both ends of splice. Use of a filler strip at the base may reduce STC rating.

Where cabinets will be installed, attach resilient channels to studs at top and bottom cabinet hanger brackets. When distance between hangers exceeds 610 mm (24") o.c., install additional channel at midpoint between hangers.

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E. Z-Furring Channel Installation

Install insulation vertically and hold in place with Z-furring channels spaced 610 mm (24") o.c. Except at exterior corners, attach narrow flanges of furring channels to wall with concrete stub nails or power-drive fasteners spaced 610 mm (24") o.c. At exterior corners, attach wide flange of furring channel to wall with short flange extending beyond corner. On adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. Start from this furring channel with a standard width insulation panel and continue in regular manner. At interior corners, space second channel no more than 300 mm (12") from corner and cut insulation to fit. Hold mineral-fibre insulation in place until gypsum base is installed with 250 mm (10") long staple field-fabricated from 1.1 mm (18 ga.) tie wire and inserted through slot in channel. Apply wood blocking around window and door openings and as required for attachment of fixtures and furnishings.

F. Wall Furring Channel Attachment—Direct

Attach metal furring channels vertically, spaced (400 mm (16")) (610 mm (24")) o.c., to interior of masonry or concrete surfaces with hammer-set or power-driven fasteners or concrete stub nails staggered 610 mm (24") o.c. on opposite flanges. Where furring channel is installed directly to exterior wall and a possibility of water penetration through walls exists, install asphalt felt protection strip between furring channel and wall.

3.2 Sound Attenuation Fire Blanket Installation

Install mineral fibre insulation after gypsum base is applied directly to the face of the studs on one side of the partition. Insert the 625 mm (25") wide blanket in the stud cavity by bowing the blanket slightly. After inserting, make a vertical cut in the blanket (about 25 mm (1") deep) on a centerline between the studs. Butt ends of blankets closely together and fill all voids. Apply gypsum base directly to studs or to resilient channels on the opposite side of the partition.

3.3 Veneer Plaster Base Installation

A. Ceiling Installation

Apply gypsum base of maximum practical length wherever possible on ceilings first with long dimension perpendicular to furring channels with blue face paper down. Position end joints over framing and stagger in adjacent rows.

Fit ends and edges closely, but not forced together. Fasten base to channels with 25 mm (1") TYPE S screws spaced 300 mm (12") o.c. in field of base and along abutting ends and edges.

For single-layer resilient ceiling system, apply GRAND PRIX Gypsum Base, ceiling first, with long dimension at right angles to channels, and end joints neatly fitted and centered over channel attachment flange. Attach with 25 mm (1") TYPE S screws spaced 300 mm (12") o.c. across each channel and perimeter screws not less than 10 mm (3/8") from ends and edges. Support gypsum base around all cutouts and openings.

For double-layer resilient ceiling system, apply base layer with long edges across joists and end joints staggered. Fasten base to framing with 8d cement-coated nails spaced 175 mm (7") o.c. Attach resilient channel through base layer perpendicular to framing with 48 mm (1-7/8") TYPE S screws. Install face layer with long dimension across channels; use 25 mm (1") TYPE S screws spaced 300 mm (12") o.c.

B. Single Layer Gypsum Base Installation

Apply gypsum base (parallel to studs) (perpendicular to studs). Position all edges over stud flanges for parallel application; all ends over stud flanges for perpendicular application. To maintain a true surface plane, arrange direction of application so leading edge of base is attached first to open edge of stud flange. Use maximum practical lengths to minimize end joints. Fit ends and edges closely, but not forced together. Stagger joints on opposite sides of partition placed on different studs.

Fasten base to stud framing with screws spaced 300 mm (12") o.c. in field of base and along abutting end joints. Screw spacing shown is for non-rated construction. For fire-rated construction, obtain screw spacing from test report.

Drive fasteners in field of base in wood framing first, working toward ends and edges. Hold base in firm contact with framing while driving fasteners. Space nails 175 mm (7") o.c. on ceilings, 200 mm (8") o.c. on walls, screws 300 mm (12") o.c. and perimeter fasteners not less than 10 mm (3/8") from ends or edges. Drive fastener heads flush with surface of base, not dimpled, and without breaking paper. Wherever base is not tight against framing, drive another fastener within 38 mm (1-1/2") of first fastener. Float gypsum base at vertical interior angles by attaching the overlapping sheet of base only, at the angle; at horizontal interior angles by attaching both sheets of base no closer than 200 mm (8") from the angle.

C. Double Layer Gypsum Base Erection

For screw attachment, space screws 610 mm (24") o.c. for base layer and 300 mm (12") o.c. for face layer. Apply both layers of gypsum base parallel to studs with joints in face layer offset from base layer joints. For 13 or 16 mm (1/2" or 5/8") base, use 25 mm (1") screws for base layer and 42 mm (1-5/8") screws for face layer.

In double-layer laminated construction, attach base layer with 25 mm (1") TYPE S screws spaced 300 mm (12") o.c. in field of base and along abutting ends and edges. Apply face layer parallel to studs with specified DURABOND Setting-Type Joint Compound or CGC/SYNKO All Purpose Ready-Mixed Joint Compound spread on back side, joints staggered approx. 300 mm (12") and fastened to base layer with 38 mm (1-1/2") Type G screws. Drive screws approximately 610 mm (2') from ends and 1200 mm (4') o.c. in field of panel, 300 mm (1') from ends and 900 mm (3') o.c. along a line 75 mm (3") from vertical edges. Screw spacing is for non-rated construction. For fire-rated construction, obtain screw spacing from test report.

D. DUROCK Cement Board

Install DUROCK Cement Board to steel framing with DUROCK Screws spaced 200 mm (8") o.c. Treat joints as specified in Section 3.4.G.

E. FIBEROCK Panels

In this two-coat veneer plaster system, DIAMOND Veneer Basecoat Plaster and IMPERIAL Finish Plaster are applied over FIBEROCK Panels attached to framing. Space wood or steel framing 400 mm (16") o.c. or 610 mm (24") o.c. Position all ends and edges of panels over framing members, except when joints are at right angles to framing members, as in perpendicular application or when end joints are back-blocked. On walls, fasteners are spaced a maximum of 300 mm (12") o.c. whether framing spacing is 610 mm (24") o.c. or 400 mm (16") o.c. For ceiling applications, nails should be spaced no more than 175 mm (7") o.c., screws, 300 mm (12") o.c. Refer to the UL Fire Resistance Directory for applicable designs.

3.4
Accessory Application—
Veneer Plaster Systems

A. Corner Bead

Attach to all vertical and horizontal exterior corners with nails, screws, or 14 mm (9/16") galvanized staples spaced 300 mm (12") o.c. along both flanges along the entire length of board.

B. Control Joints

Install where indicated on plans. Break base behind joint and back by double studs. Apply acoustical sealant behind control joint. (Control Joint No. 093—square-cut end joints, butt together and align for neat fit.) Remove protective tape after plastering.

1. **Interior Ceilings**

Position control joints to intersect light fixtures, heating vents, air diffusers, etc.

2. **Interior Walls and Partitions**

Space control joints maximum of 9 m (30') apart; control joints may occur over door frames as indicated in drawings.

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C. Casing Beads and Metal Trim

Apply to GRAND PRIX Gypsum Base with fasteners or 14 mm (9/16") galvanized staples 300 mm (12") o.c. Cut and miter ends accurately and install where partitions or ceilings terminate against masonry or dissimilar material, and where indicated.

D. Screws

Power-drive and set flush with surface of GRAND PRIX Gypsum Base without tearing through the paper.

E. Laminating Adhesive

For laminating double layers of GRAND PRIX Gypsum Base, spread to provide full 13 mm (1/2") adhesive beads 114 mm (4-1/2") o.c. for full sheet lamination. For strip lamination, apply adhesive in vertical strips of four 13 mm (1/2") beads to 50 mm (2") o.c. Space strips 610 mm (24") o.c.

F. Joint System

For veneer plaster systems, use CGC Setting-Type Lightweight or DURABOND Setting-Type Joint Compound to treat all joints and internal angles when any of the following conditions exists: rapid drying conditions due to low humidity, high temperature or excessive evaporation; metal framing is specified; 610 mm (24") o.c. wood frame spacing and a single-layer gypsum base veneer system is specified (16 mm (5/8") base with one-coat veneer finish and 13 or 16 mm (1/2" or 5/8") base with two-coat veneer finish). Allow joint treatment to set and dry thoroughly before plaster application.

Over wood framing, firmly embed IMPERIAL Type P Tape to ensure wrinkle-free attachment. Do not overlap tape at intersections, and apply over full length of gypsum base.

G. Joint System (DUROCK Cement Board or FIBEROCK Interior Panels)

Apply CGC Plaster Bonder in a continuous film to joint areas, then treat joint areas with SHEETROCK Joint Tape and DURABOND or SHEETROCK Setting-Type Joint Compound. Provide an additional coat of setting-type compound to fully conceal the tape. Allow to completely dry.

3.5
IMPERIAL Basecoat
and DIAMOND
Veneer Basecoat
Plasters

A. Gypsum Base

When applied directly to GRAND PRIX Gypsum Base, embed tape and fill beads, and allow plaster to set, then scratch and immediately double back to a thickness of 1.5 to 2.4 mm (1/16" to 3/32"), in accordance with manufacturer's directions.

B. Concrete Block

When applied directly over unglazed concrete block, fill all voids and depressions including joints. Spray concrete block uniformly with water immediately before applying basecoat. Apply basecoat and leave rough and open and allow to set prior to lime putty or veneer plaster finish application. RED TOP Accelerator may be used to quicken set. Total basecoat shall be 1.5 to 2.4 mm (1/16" to 3/32") thick.

C. Monolithic Concrete

When applied to monolithic concrete to which CGC Plaster Bonder is to be applied, surface shall be free of dirt, dust, grease, wax, oil, or other unsound surface conditions. Laitance, efflorescence and parting compounds shall be chemically removed. Apply CGC Plaster Bonder to concrete surface in a continuous film according to product directions. Apply basecoat plaster with firm pressure in a thin coat over the bonding agent. Immediately double back to a completed thickness of 1.5 to 2.4 mm (1/16" to 3/32") with a level surface. It is essential that the applied basecoat surface be raked or broomed once the material has become firm for a rough and open surface to provide proper suction for finish coat. Failure to do so may result in delamination of the finish plaster.

D. Where plaster is flush with metal base, metal door frames, etc., trowel-cut at the junction to reduce the possibility of chipping. Cut basecoat plaster free from these metal sections before plaster sets.

E. DUROCK Cement Board or FIBEROCK Panels

When the joints are completely dry, treat the entire wall surface with CGC Plaster Bonder according to the application directions. Then apply DIAMOND Veneer Basecoat Plaster 1.5 to 2.4 mm (1/16" to 3/32") thick using scratch and double-back technique. When basecoat plaster is firm, broom the surface to leave it rough and open for finish. With basecoat set and partially dry, apply IMPERIAL Finish Plaster as specified in Section 3.7.C. Leave finished surface smooth and dense for decorating.

**3.6
Plaster Thicknesses—
Veneer Plaster Systems**

Shall be shown on plans; however, in no case shall the grounds be less than:
Masonry units and DUROCK Cement Board—up to 5 mm (3/16") for two-coat veneer applications
Monolithic concrete ceilings—2.4 mm (3/32") (10 mm (3/8") maximum)
Monolithic concrete walls—2.4 mm (3/32") (16 mm (5/8") maximum)
IMPERIAL Plasters—1.5 to 2.4 mm (1/16" to 3/32") (over special gypsum base)
DIAMOND Interior Finish (for electrical cable ceilings)—10 mm (3/8") (over special gypsum base or monolithic concrete).

**3.7
Veneer Plaster
Finish Applications**

A. DIAMOND Interior Finish

Over GRAND PRIX Gypsum Bases embed tape, fill beads, and allow to set; then apply a thin, tight scratch coat over entire working area. Immediately double back with material from same batch to a nom. 1.5 to 2.4 mm (1/16" to 3/32") thickness. Over DIAMOND Veneer Basecoat Plaster, scratch and immediately double back to 1.5 to 2.4 mm (1/16" to 3/32") thickness. Over monolithic concrete, apply CGC Plaster Bonder, then scratch and double back with a job-aggregated plaster to a 2.4 mm (3/32") thickness.

B. DIAMOND Interior Finish (for electrical cable ceilings)

Over monolithic concrete ceilings, prepare the surface with CGC Plaster Bonder in a continuous film. Apply job-sanded DIAMOND Interior Finish to a total thickness of 10 mm (3/8")—consisting of a 8 mm (5/16") fill coat to completely cover cable and anchoring devices, and 1.5 mm (1/16") finish coat.

C. IMPERIAL Finish

Over GRAND PRIX Gypsum Base embed tape, fill beads and allow to set; then scratch and immediately double back to a thickness of from 1.5 to 2.4 mm (1/16" to 3/32") in accordance with manufacturer's directions. Over IMPERIAL Basecoat, scratch and immediately double back to 1.5 mm (1/16") thickness.

D. Other Finishes

In addition, other conventional plaster finishes may be applied over veneer basecoat:

1. SNOWDRIFT Lime

Shall be machine-mixed for immediate use with approx. 20-24 litres water per 22.5 kg (50 lb.) bag.

2. RED TOP Lime

Shall be box-soaked or machine-mixed using approx. 24 litres water per 22.5 kg (50 lb.) bag, and allowed to soak for 16 hours.

3. Finish Plaster

Shall be mixed in proportion by dry weight of _____ parts of gauging to _____ parts of lime (specify from coverage data), according to applicable bag directions. Over lightweight aggregate basecoats (such as STRUCTO-LITE Gypsum Plaster), add 0.014 m³ (1/2 cu. ft.) of perlite fines or 22.5 kg (50 lb.) of silica sand to meet ASTM C35 per 45 kg (100 lb.) of gauging plaster or use mill-aggregated gauging plaster.

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4. Trowel Finish Coats

Scratch plaster in thoroughly and immediately double back to fill out to a smooth, dense surface for decoration, free of surface blemishes and irregularities. Apply finish coat as thin as possible, preferably 1.5 mm (1/16") to not more than 2.4 mm (3/32") maximum thickness.

5. Float Finish Coats

Scratch plaster in thoroughly and immediately double back to a true, even surface. Float using a (shingle) (cork) (wood) (carpet) (sponge), or (rubber) float to bring aggregate to the surface to produce a finish of uniform texture free of slick spots, cat faces, and other blemishes. Use water sparingly on natural colour, and no water on coloured finishes.

6. Machine-Applied Spray Finishes

Apply initial coat of finish by hand and float to uniform texture surface to provide a background. Then apply plaster in a uniform spray pattern to produce a texture approved by the architect or owner.

E. Finish Coat

Brown coat must be left roughened, open and partially dry (green state) to receive finish coat.

The following finishes are recommended and listed in descending order of hardness and abrasion resistance:

1. RED TOP Finish Plaster—Machine mix mill-mixed plaster following the directions on the bag. Apply a tight scratch coat over the entire working area. Immediately double-back with material from the same batch and fill out to a true and even surface nominally 1.5 mm (1/16") thick. Allow surface to become firm, then trowel well with water. Do final troweling after the finish has begun to set. Surface shall be free from cat faces and other blemishes or irregularities.
2. Gauging Plaster with SNOWDRIFT or RED TOP Lime—Mix lime in a clean mechanical mixer or a portable drill mixer; add one bag of lime to 20-24 litres of water and mix until putty is smooth. Mix finish plaster in proportions by dry weight of 1 part gauging plaster to 1 part lime. Apply finish plaster as described for RED TOP Finish Plaster.
3. RED TOP or Gauging Plaster with SNOWDRIFT or RED TOP Lime—Mix lime as described in No. 2, above. Mix finish plaster in proportions by dry weight of 1 part gauging plaster to 2 parts lime. Apply finish plaster as described for RED TOP Finish Plaster.

3.8 Gypsum Plaster Lath Installation

Plaster Base Installation

Apply 12 mm (1/2") GRAND PRIX Plaster Base, bottom course first, with face out, long dimension at right angles to studs and joints butted together. Cut lath to fit neatly around electrical outlets, openings, etc. Place end joints between studs, staggered in successive courses. Align and support lath ends at top, center and bottom of each butt joint. Secure lath to studs using two 25 mm (1") TYPE S screws per stud, each located 50 mm (2") from lath edge. Check "Frame and Fastener Spacing—GRAND PRIX Plaster Base" table for recommendations for base thickness and types of framing.

3.9 Accessory Application— Conventional Plaster Systems

A. Control Joints

Install where indicated on plans. Break base or lath behind joint and back by double studs. Where channel framing is used, also break the channels. (Control joint Nos. 50, 75, 100—splice ends together with 1.4 mm (16 ga.) tie wire inserted into openings in the key-lock sections.)

1. **Interior Ceilings**

Position control joints to intersect light fixtures, heating vents, air diffusers, etc.

2. **Interior Walls and Partitions**

Space control joints maximum of 9 m (30') apart; control joints may occur over door frames as indicated in drawings.

3. **Portland Cement Stucco—Exterior Walls, Soffits, and Canopies**

Space control joints not exceeding 3000 mm (10') in either direction. Where there is an intersection of vertical and horizontal joints, use continuous vertical joint and butt the horizontal joint. Caulk splices and intersections exposed to the elements with a silicone rubber caulking cement. In soffits and canopies, break lath and channel behind control joints.

B. Reinforcing

Install self-furring Diamond Mesh Lath or Cornerite over joints between dissimilar conventional plaster bases. Reinforce openings with Striplath stapled diagonally across corners. Install Striplath in interior plaster angles.

**3.10
Plaster Thicknesses—
Conventional Plaster
Systems**

Shall be shown on plans; however, in no case shall the grounds be less than:

Metal lath—16 mm (5/8") (from face of lath)

GRAND PRIX Plaster Base—13 mm (1/2")

Masonry units—16 mm (5/8") conventional

**3.11
Basecoat Plaster—
Conventional**

A. Mixes

1. **Basecoat application**

Mix basecoat plasters by hand or in a mechanical mixer to a uniform consistency following manufacturer's directions.

Apply basecoat plaster by (hand) (machine) in (1) (2) coats. Monolithic or unit masonry surfaces that exhibit high suction shall be moderately wetted immediately before plastering.

2. **Two-coat work**

Over gypsum lath and masonry, apply base (first) coat with sufficient material and pressure to form good bond to base and to cover well, and then double back to bring plaster out to grounds. Straighten to a true surface with rod and darby without use of additional water and leave rough to receive finish (second) coat.

3. **Three-coat work**

Apply scratch (first) coat with sufficient material and pressure to form good full keys on metal lath, and good bond on other bases, and then cross-rake. Apply brown (second) coat after scratch (first) coat has set firm and hard. Bring out to grounds and straighten to a true surface with rod and darby without use of additional water. Leave rough to receive finish (third) coat.

**3.12
Finish Coat Plaster
Applications—
Conventional and Other**

A. Mixes

1. **Veneer Plaster—Prepared Finish**

Add all but 1 to 2 litres of the required water to a non-plastic mixing container. Mix for 1 to 2 minutes, add up to 1 to 2 litres of retained water and then mix for 1 to 2 minutes more. Mix with a cage-type paddle mixer using a 900-1000 rpm 13 mm (1/2") drill.

2. **SNOWDRIFT Lime**

Shall be machine-mixed for immediate use with approx. 20-24 litres water per 22.5 kg (50 lb.) bag.

3. **RED TOP Lime**

Shall be box-soaked or machine-mixed using approx. 24 litres water per 22.5 kg (50 lb.) bag, and allowed to soak for 16 hours.

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Specifications

4. Finish Plaster

Shall be mixed in proportion by dry weight of _____ parts of gauging to _____ parts of lime (specify from coverage data), according to applicable bag directions. Over lightweight aggregate basecoats (such as STRUCTO-LITE Gypsum Plaster), add 0.014 m³ (1/2 cu. ft.) of perlite fines or 22.5 kg (50 lb.) of No. 1 silica sand per 45 kg (100 lb.) of gauging plaster or use mill-aggregated "quality" gauging plaster.

5. Trowel Finish Coats

Scratch plaster in thoroughly and immediately double back to fill out to a smooth, dense surface for decoration, free of surface blemishes and irregularities. Apply finish coat as thin as possible, preferably 1.5 mm (1/16") to not more than 3 mm (1/8") maximum thickness.

6. Float Finish Coats

Scratch plaster in thoroughly and immediately double back to a true, even surface. Float using a (shingle) (cork) (wood) (carpet) or (rubber) float to bring aggregate to the surface to produce a finish of uniform texture free of slick spots, cat faces and other blemishes. Use water sparingly on natural colour, and no water on coloured finishes.

7. Machine-Applied Spray Finishes

Apply initial coat of finish by hand and float to uniform texture surface to provide a background. Then apply plaster in a uniform spray pattern to produce a texture approved by the architect or owner.

8. Finish Coat

Brown coat must be partially dry (green state) to receive finish coat.

The following finishes are recommended and listed in descending order of hardness and abrasion resistance:

- a. IMPERIAL Finish Plaster—Mix plaster as recommended in CGC Technical Data Sheets. Apply a tight scratch coat over the entire working area. Immediately double-back with material from the same batch to a nominal 1.5 mm (1/16") thickness. Lay on material in a uniform manner to avoid trowel marks, laps and excess material. Under no circumstances should the surface be rewetted with water or over-worked, as this will only result in subjecting the surface to blistering and further trowel marks. The surface is smooth-troweled only after initial firmness is reached, and final troweled once full firmness occurs. Water troweling must be avoided. The wall surface must be left "under the trowel"; do not use water brush or blister brush on finished surface.
- b. DIAMOND Interior Finish Plaster—Mix plaster as recommended in CGC Technical Data Sheets. Apply a tight scratch coat over the entire working area. Immediately double-back with material from the same batch to a nominal 1.5 mm (1/16") thickness. Start finish troweling as soon as material has become sufficiently firm to achieve a smooth surface free from marks, voids, and other blemishes. Smooth and level the surface with the trowel held flat; use water sparingly to lubricate. Final smooth troweling should be accomplished prior to set as indicated by darkening of the surface.
- c. RED TOP Finish Plaster—Machine mix mill-mixed finish plaster following the directions on the bag. Apply a tight scratch coat over the entire working area. Immediately double-back with material from the same batch and fill out to a true and even surface nominally 1.5 mm (1/16") thick. Allow surface to become firm, then trowel well with water. Do final troweling after the finish has begun to set. Surface shall be free from cat faces and other blemishes or irregularities.
- d. STRUCTO-LITE Gauging Plaster with SNOWDRIFT or RED TOP Lime—Mix lime in a clean mechanical mixer or a portable drill mixer; add one bag of lime to 20-24 litres of water and mix until putty is smooth. Mix finish plaster in proportions by dry weight of 1 part gauging plaster to 1 part lime. Apply finish plaster as described for RED TOP Finish Plaster.
- e. RED TOP or Gauging Plaster with SNOWDRIFT, or RED TOP Lime—Mix lime as described in No. 4, above. Mix finish plaster in proportions by dry weight of 1 part gauging plaster to 2 parts lime. Apply finish plaster as described for RED TOP Finish Plaster.

3.13

Special Applications

A. Solid Studless Metal Lath Partition

Apply scratch coat to side opposite bracing, and allow to set and partially dry. Then apply brown coat to side opposite braces, allowing it to set thoroughly before removing temporary braces. Next apply brown coat to previously braced side to bring plaster out to grounds. Straighten to a true surface with rod and darby without use of additional water, and leave surface rough to receive finish coat.

B. Solid Channel Stud Metal Lath Partition

Apply scratch coat to lath side and allow to set and partially dry. Then apply back-up coat to channel side to full grounds, 13 mm (1/2") over channels, in not less than two operations; allow to set. Apply brown coat on lath side to bring plaster out to grounds. Straighten to a true surface with rod and darby without use of additional water, and leave surface rough and open to receive finish coat.

C. STRUCTOCORE Security Wall System

See product specifications in SA1119, *Security Wall Systems*.

D. Handball/Racquetball Courts

See product descriptions, technical data, and specifications in PM14.

E. Portland Cement Basecoats

Shall be proportioned as specified in Section 2.9E, and applied in two coats. Rake scratch coat perpendicular to framing; after set, damp-cure for not less than 48 hours. Damp-cure brown coat after set for not less than 48 hours.

F. Steel Door Frames

Grout all steel door frames with sanded plaster (see Good Design Practices, No. 2) in steel stud partitions prior to lathing.

3.14

Ornamental Plastering

Execute ornamental plaster in accordance with scale details shown on the drawings. Run cornices and mouldings full, straight, and true with moulding plaster, using clean-cut metal conforming to the profiles shown on the drawings. Align lines accurately with square intersections, and accurate miters at corners and angles. Prepare enriched ornamental work that cannot be run in place with White HYDROCAL Gypsum Cement cast in gelatin moulds. Back the work solidly with jute or burlap and properly reinforce with galvanized steel. Make all joints carefully and point neatly so as to be invisible. Sandpaper rough spots and leave entire work ready for decoration.

3.15

Patching

Point up around trim and other work. Cut out and patch defective and damaged plaster. Patch plaster to match existing work in texture and finish flush and smooth.

3.16

Completion

At the completion of the finish plaster work, clean all plaster from beads, screeds, metal base, and metal trim, leaving work ready for decoration by others. Remove all plaster rubbish, excess material, scaffolding, tools and equipment from the building, leaving floors broom-clean.

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About the cover:

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