

D A T A S U B M I T T A L

Retro-Guard® RG

Replacement Fireproofing

Product Information/Description

Retro-Guard® RG replacement fireproofing is a single component, mill-mixed gypsum plaster based product which requires only the addition of water on the jobsite to form a consistent, pumpable slurry. RG can be used on structural steel columns, beams, joists, trusses, flat plate cellular and fluted decking.

Features/Benefits

Retro-Guard Cementitious Fireproofing has been specifically developed by Grace Construction Products to meet the needs of the fireproofing respray contractor. Retro-Guard offers the following advantages to the contractor:

- Easy to use – Can be applied with rotor-stator and piston pumps commonly available
- Quick set – In 7 to 10 minutes with the use of Monokote® Accelerator and Injection System
- Low water ratio – Reduced drying time
- Less overspray – Work close to steel, less cleanup
- No noxious fumes or irritating particulates released during or after application
- Hard durable surface
- Excellent in-place qualities
- Extra-strength bags for handling and storage ease
- UL Listed for beam, column, floor and roof assemblies
- Fully UL fire tested and classified for use with the most post-removal lock downs in the industry
- Dries to a light blue color – Easily identified and differentiated

Materials

- a. Material shall be Retro-Guard RG replacement fireproofing as manufactured by Grace Construction Products.
- b. Mixing water shall be clean, fresh and suitable for domestic consumption, and free from such amounts of mineral or organic substances as would affect the set of the fireproofing material.

Performance Characteristics

Physical Properties	RG	Test Method
Dry density, minimum average	240 kg/m ³ (15 pcf)	ASTM E605 UBC STD 7-6
Bond strength	16.2 KPa (339 psf)	ASTM E736
Compression, 10% deformation	68.9 KPa (1,440 psf)	ASTM E761
Air erosion	0.000 g/m ² (0.000 g/ft ²)	ASTM E859
High velocity air erosion	No continued erosion after 4 hours	ASTM E859 UMC STD 6-1
Corrosion	Does not contribute to corrosion	ASTM E937
Bond impact	No cracking, spalling or delamination	ASTM E760
Deflection	No cracking, spalling or delamination	ASTM E759
Resistance to mold growth	No growth after 28 days	ASTM G21
Surface burning characteristics	Flame spread = 0 Smoke developed = 0	ASTM E84
Combustibility	Less than 5 MJ/m ² total, 20 kw/m ² peak heat release	ASTM E1354
Impact penetration	3.3 cm ³	Developed by City of San Francisco
Abrasion resistance	8.3 cm ³	Developed by City of San Francisco

- c. Lock down agents shall be UL Classified for use with Retro-Guard RG. Refer to the ULI Fire Resistance Directory current edition for products listed with Retro-Guard under Classification Category CBUI.

Delivery And Storage

- a. All material to be used for fireproofing shall be delivered in original unopened packages bearing the name of the manufacturer, the brand and the proper Underwriters Laboratories Inc. identification.

Mixing

- a. Retro-Guard shall be mixed by machine in a conventional plaster type mixer or a continuous mixer specifically modified for cementitious fireproofing. The mixer shall be kept clean and free of all previously mixed material. The mixer speed in a conventional mixer shall be adjusted to the lowest speed which gives adequate blending of the material and a mixer density of 640 - 720 kg/m³ (40 - 45 pcf) of material.

b. Using a suitable metering device and a conventional mixer, all water shall be first added to the mixer as the blades turn. Where possible, the mixer blades shall then be stopped and all the Retro-Guard fireproofing added. The mixer blades shall then be restarted. If the mixer blades are left running, Retro-Guard should be added to the mixer as quickly as possible. Mixing shall continue only until all material is thoroughly wet and no lumps remain. Target density of $688 \pm 16 \text{ kg/m}^3$ ($43 \pm 1 \text{ pcf}$) is most desirable. Overmixing Retro-Guard will reduce pumping rate and will adversely affect final in-place density and hangability. Undermixing Retro-Guard will negatively affect in-place density and yield.

Steel Surfaces

a. Prior to the application of Retro-Guard an inspection shall be made to determine that all steel surfaces are acceptable to receive fireproofing. The steel to be fireproofed shall be free of oil, grease, excess rolling compounds or lubricants, loose mill scale, rust or any other substance that will impair proper adhesion. Where necessary, the cleaning of steel surfaces to receive fireproofing shall be the responsibility of the abatement contractor, or general contractor.

b. The project architect shall determine if the painted/primed steel or lock down agent on the steel to receive fireproofing have been tested in accordance with ASTM E119, to provide the required fire resistance rating.

c. Many Fire Resistance Designs allow the use of painted metal floor or roof deck in place of galvanized decking. Painted decking must be UL listed in the specific fire resistance designs and must carry the UL classification marking. Consult your local Grace sales representative for details.

d. Prior to application of Retro-Guard, a bonding agent, approved by the fireproofing manufacturer, shall be applied to all concrete substrates to receive Retro-Guard.

e. In advance of the application of the fireproofing, a bond test shall be conducted on all painted/primed steel surfaces or steel that has been covered with a lock down agent to determine if the paint or lock down agent will impair the ambient bond of the fireproofing.

f. Where cellular steel decking is present, both cellular and fluted decking requires the application of Spatterkote® SK-3 before application of Retro-Guard RG. The thickness of SK-3 is incorporated into the total fireproofing thickness.

g. Fireproofing to the underside of steel roof deck assemblies shall be done only after roofing application is complete and roof traffic has ceased.

Application

a. Application of Retro-Guard Fireproofing can be made in the following sequence:

1. For thicknesses of approximately 13 mm ($\frac{1}{2}$ in.) or less, apply in one pass.
2. For thicknesses of 16 mm ($\frac{5}{8}$ in.) or greater, apply second passes after the first coat has set.

The use of the Monokote Accelerator Injection System is required to obtain optimal job site application performance. The use of the Monokote Accelerator Injection System will provide quick set material (usually seven to ten minutes after application), greater in-place yield, and the ability to spray an area in essentially one continuous operation. Second coat can be applied as soon as first material applied has set.

b. Prior to application of Retro-Guard, a bonding agent, approved by the fireproofing manufacturer, shall be applied to all concrete substrates to receive Retro-Guard.

c. Spatterkote SK-3 shall be applied to all deck areas when flat plate cellular steel decking is present, and as specified in some roof deck designs. Consult current UL Directory for specific use. Spatterkote shall be applied in accordance with manufacturer's application instructions.

d. Retro-Guard Fireproofing material shall not be used if it contains partially set, frozen or caked material.

e. Retro-Guard shall have a minimum average dry in-place density of 240 kg/m^3 (15 lbs/ft^3).

f. Retro-Guard is formulated to be mixed with water at the job site.

g. Monokote Accelerator when used shall be mixed and used according to the manufacturers recommendations.

h. Retro-Guard is applied directly to the steel, at various rates of application which will be job dependent, using standard plastering type equipment or continuous mixer/pump units. A spray gun, with a properly sized orifice and

spray shield and air pressure at the nozzle of approximately 38 KPa (20 psi), will provide the correct hangability, density and appearance. NOTE: If freshly sprayed Retro-Guard does not adhere properly, it is probably due either to a too wet mix, poor thickness control, or an improperly cleaned substrate.

Temperature and Ventilation

a. An air and substrate temperature of 4.5°C (40°F) minimum shall be maintained for 24 hours prior to application, during application and for a minimum of 24 hours after application of Retro-Guard.

b. Provisions shall be made for ventilation to properly dry the fireproofing after application. In enclosed areas lacking natural ventilation, air circulation and ventilation must be provided to achieve a minimum total air exchange rate of 4 times per hour until the material is dry.

Field Tests

a. The architect will select an independent testing laboratory (for which the owner will pay) to sample and verify the thickness and density of the fireproofing in accordance with the provisions of ASTM E605-93, "Standard Test Method for Thickness and Density of Sprayed Fire-Resistive Material Applied to Structural Members" or Uniform Building Code Standard No. 7-6, "Thickness and Density Determination for Spray Applied Fireproofing".

b. The architect will select an independent testing laboratory (for which the owner will pay) to randomly sample and verify the bond strength of the fireproofing in accordance with the provisions of ASTM E736.

c. Results of the above tests will be made available to all parties at the completion of pre-designated areas which shall have been determined at a pre-job conference.

Safety

a. Retro-Guard is SLIPPERY WHEN WET. The General Contractor and Applicator shall be responsible for posting appropriate cautionary "SLIPPERY WHEN WET" signs.

b. A Material Safety Data Sheet for Retro-Guard RG is available on request by writing: Monokote Fireproofing Dept. Grace Construction Products 62 Whittemore Ave. Cambridge, MA 02140

For Technical Assistance call toll free at 866-333-3SBM (3726).



W. R. Grace & Co.-Conn. 62 Whittemore Avenue Cambridge, MA 02140

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