

SELECTION & SPECIFICATION DATA

Generic Type	Fireproof mortar for passive fire protection of metal and concrete structures
Description	Portland cement based, low density, fireproof mortar, with high performance against fire for the protection of metal and concrete structures. Density 375 Kg/m ³ . High fire performance, optimised consumption and savings in consumables. Suitable for the architectural and construction market.
Features	<ul style="list-style-type: none"> • Formulation with high performance light fillers. • Non-combustible. • High durability. • It is recommended to be projected with a discontinuous machine to optimise performance. • Asbestos free. Complies with regulations 2003/18/CE and RD 396/2006. • High adhesion on metal and concrete substrates. • Lightweight and low abrasive with projection equipment. Savings in consumables. • Low protection thickness. • Tolerates a wide range of weather conditions.
Color	<p>Grey.</p> <p>Product colour may vary due to variations in the colour of Portland cement.</p>
Finish	Rough. Can be smoothed
Primer	Pyrocrete 60 can be applied directly to concrete or primed metal and is compatible with different families of primers. No pre-priming or bonding is required for application to concrete. Please contact Carboline Technical Service for further information. Pyrocrete 60 neither promotes nor prevents corrosion.
Application Thickness	<p>Maximum thickness per layer 25 mm on concrete substrate and maximum thickness per layer 15 mm on steel.</p> <p>Not recommended for use as a refractory mortar or where normal operating temperatures exceed 90 °C.</p>
Theoretical Coverage Rates	Average value obtained in laboratory conditions, with a kneading speed of 60 rpm and a time of 90 s. If any of these parameters are modified, both the final density and the yield could be altered.
Topcoats	Generally not necessary. In highly corrosive atmospheres, contact Carboline Technical Service for the selection of the most suitable coating for the required exposure.

SUBSTRATES & SURFACE PREPARATION

General	Prior to application, the substrate must be clean and free of loose particles, dirt, oil, grease, condensation or any other substance that may affect adhesion. Contact Carboline Technical Service for more information.
Steel	Apply a suitable anticorrosive primer, preparing the steel as indicated in the product data sheet. Contact Carboline Technical Service for a list of approved primers.
Concrete	Can be applied directly to concrete, no primer or bonding bridge is required.

PYROCRETE 60

PRODUCT DATA SHEET



MIXING & THINNING

Mixer	Machine: Discontinuous. Use a plaster mortar mixer or similar with a capacity of at least 100 litres and capable of rotating at 60 rpm with rubber-tipped blades that clean the sides of the hopper. Continued. Contact Carboline Technical Service for recommendations. Densities and yields may vary when using this type of mixing equipment.
Mixing	Always mix with clean potable water. The mixer must be kept clean and free of any previously mixed material that may cause premature setting of the product. Mixing of 2 bags with batch machines is recommended. Mixing time should be approximately 1.5 minutes per mix at 60 rpm. Use 15 litres of water per 15.5 kg bag. Add water to the hopper first with the blades stopped. With the mixer on, add mortar to the water and begin mixing.
Pot Life	1 hour at 20°C, the higher the temperature, the shorter the use time. These times are approximate and may also vary depending on ambient humidity and draughts. The service life of the material ends when it hardens and becomes unusable.
Density	Target paste density: 550 - 650 kg/m ³ . Paste density measurements are critical to obtain adequate hardened mortar densities. When verifying paste densities, use the following procedures: Equipment required: -1 litre (1000 cc) plastic cup or known volume. -Small metal spatula. -Scale accurate to 1 gram. -Determination of the paste density of PYROCRETE 60: -Weigh the empty glass and then tare the scale. -Use the spatula to fill the beaker completely with kneaded mortar (do not deform the beaker). -Remove excess material from the top of the vessel by placing the vertical edge of the trowel on the top edge of the vessel. Use a sawing motion to level the mortar. PYROCRETE 60 mixed flush with the top of the glass. Weigh the beaker filled with mortar to the nearest gram. Record the weight of the material in grams. This value is equal to the paste density in kg/m ³ (g/l). For more information and recommendations on how to get the right density and performance, please contact your Carboline representative.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Pump	This material can be pumped with a wide range of piston, rotor, stator and compressor pumps designed to pump cement and gypsum materials, including: PFT - model # ZP 3 L Multimix (Discontinued) Putzmeister - model # S5EV (Discontinued) Wall Goe - model # JP70-L. (Discontinued) Putzmeister - model # MP25 (Continued) PFT - model # G4 Smart (Continued) Essick - model # FM9/FM5E (Continued) Hy-Flex - model # HZ-30E (Continued) Ball valves should be located at least at the end of the spray hose to facilitate cleaning.
Material Hose	Use flexible spray hose of 5 to 10 m length and at least 25 mm inner diameter. Working pressure at least 30 bar. Minimum length of the spray lance 300 mm and minimum inside diameter 25 mm. With ball valve for material shut-off and air shut-off valve.
Nozzle/Gun	From 10 to 16 mm depending on the desired finish.
Compressor	The pump compressor must be capable of maintaining a minimum of 2 bar (30 psi) and 250 to 300 l/min at the nozzle.

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Air Line | Use an internal diameter of 16 mm. Hose with a minimum burst pressure of 100 psi (7 bar).

APPLICATION PROCEDURES

General | Thicknesses of 25 mm or less can be applied in one pass. When additional coats are required to achieve the specified thickness, it is recommended that subsequent coats be applied after the previous coat has begun to set. If the previous coat has set and is dry, dampen the surface with water before applying additional coats. Contact Carboline Technical Service for further information.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	4°C (39°F)	4°C (39°F)	4°C (39°F)	0%
Maximum	38°C (100°F)	52°C (126°F)	43°C (109°F)	90%

Fresh Pyrocrete 60 must be protected from rain or running water for 24 hours after application. In conditions of low humidity, high temperature, direct sun or wind, the surface of PYROCRETE 60 should be kept moist for at least 12 hours after application by water mist or plastic sheeting to control water loss.

Caution: Do not start spraying if the ambient temperature is expected to drop below 2 °C within 24 hours after application. For additional recommendations contact Carboline Technical Service.

CURING SCHEDULE

Surface Temp.	Dry to Topcoat
21°C (70°F)	4 Hours

CLEANUP & SAFETY

Cleanup	The liner, mixer and hose must be cleaned with potable water at least once every 4 hours at 21 °C or more often at higher temperatures. Sponges or plenty of water should be passed through the hose to remove any remaining material in the hose. Excess wet sprayed Pyrocrete 60 mortar should be cleaned up with clean potable water. Dry mortar due to spraying may require scraping to remove.
Safety	Follow all safety precautions described in the mortar safety data sheet. The use of personal protective equipment, including application suits, gloves and eye protection is recommended.
Overspray	Adjacent surfaces must be protected from damage and splashing. Sprayed-on fireproofing materials can be difficult to remove from surfaces and may damage architectural finishes.
Ventilation	In enclosed areas, ventilation should not be less than 4 full air exchanges per hour until the material is dry.

PYROCRETE 60

PRODUCT DATA SHEET



TESTING / CERTIFICATION / LISTING

General	Pyrocrete 60 has been tested by: EN 1363-1. Fire resistance tests. Part 1: General requirements and Standard. EN 13381-3. Test methods for determining the contribution to the fire resistance of structural members Applied protection to concrete members Applus Laboratories. EN 13381-4. Test methods for determining the contribution to the fire resistance of structural members Applied passive protection products to steel members by Applus Laboratories.
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PACKAGING, HANDLING & STORAGE

Shelf Life	12 to 24 months maximum, provided the product is stored under the recommended conditions.
Storage	Store indoors and in a dry environment. The material must be kept dry or lumps may occur.
Packaging	15 kg bag, 42 bags per pallet.

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.