

# Industrial Fireproofing

# System Guide

High Density Cementitious  
Epoxy Intumescent  
Electrical Cable Fireproofing  
Epoxy Syntactic Insulation



# High Density Cementitious Fireproofing

**Pyrocrete 241 HD / Pyrocrete 241 / Pyrocrete 241 HY**  
**70 - 50 lbs/ft<sup>3</sup> (1,121 - 800 kg/m<sup>3</sup>) High Density Cementitious Passive Fire Protection (PFP) For Structural Steel And Existing Concrete Substrates**

PREP	PRIMER	DESCRIPTION	PFP	DESCRIPTION	SEALER / TOPCOAT	DESCRIPTION
<b>Exterior / Interior Structural Steel - Primed Carbon Steel</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection, cryogenic protection against LNG spills and immersion exposures and explosion blast resistance)</b>						
SP 3*	Qualified** Carbozinc Series -or- Carboguard Series -or- Carbomastic Series	Inorganic zinc -or- Zinc rich epoxy -or- Polyamide epoxy -or- Polyamide epoxy mastic	Pyrocrete 241 HD -or- Pyrocrete 241 -or- Pyrocrete 241 HY  with lath where required***	70 lbs/ft <sup>3</sup> (pcf) (1,121 kg/m <sup>3</sup> ) -or- 55 lbs/ft <sup>3</sup> (pcf) (881 kg/m <sup>3</sup> ) -or- 50 lbs/ft <sup>3</sup> (pcf) (800 kg/m <sup>3</sup> ) Portland Cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane
<b>Exterior / Interior Structural Steel - Galvanized Steel</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection, cryogenic protection against LNG spills and immersion exposures and explosion blast resistance)</b>						
SP 1*	No primer required	N/A	Pyrocrete 241 HD -or- Pyrocrete 241 -or- Pyrocrete 241 HY  with lath where required***	70 lbs/ft <sup>3</sup> (pcf) (1,121 kg/m <sup>3</sup> ) -or- 55 lbs/ft <sup>3</sup> (pcf) (881 kg/m <sup>3</sup> ) -or- 50 lbs/ft <sup>3</sup> (pcf) (800 kg/m <sup>3</sup> ) Portland Cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane
<b>Exterior / Interior - Existing Concrete</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection, cryogenic protection against LNG spills and immersion exposures and explosion blast resistance)</b>						
SP 1*	Carboguard 1340	Penetrating epoxy sealer/topcoat	Pyrocrete 241 HD -or- Pyrocrete 241 -or- Pyrocrete 241 HY  with lath where required***	70 lbs/ft <sup>3</sup> (pcf) (1,121 kg/m <sup>3</sup> ) -or- 55 lbs/ft <sup>3</sup> (pcf) (881 kg/m <sup>3</sup> ) -or- 50 lbs/ft <sup>3</sup> (pcf) (800 kg/m <sup>3</sup> ) Portland Cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.  
 \*\* Primer systems and topcoat systems must be pre-qualified by Carboline prior to use. Primed steel must meet minimum UL bond strength criteria. Contact Carboline Technical Service for further information. Pyrocrete materials do not require a topcoat per UL 1709, but topcoats are routinely used for added system durability.  
 \*\*\* 3.4 lb./yd<sup>2</sup> galvanized metal lath is typically utilized for most UL 1709 designs. Lath is attached by mean of pneumatic galvanized fasteners or welded pins. Plastic nosed corner bead can also be utilized as a construction aid. Refer to UL design for details or contact Carboline Technical Service for further information.  
**Note:** All terminations are sealed using Acrilast Silicone Caulk.  
**Note:** Physical properties and product durability increase with higher density cementitious products.

# High Density Cementitious Fireproofing

**Pyrocrete 40**  
**40 lbs/ft<sup>3</sup> (640 kg/m<sup>3</sup>) High Density Cementitious Passive Fire Protection (PFP) For Structural Steel And Existing Concrete Substrates**

PREP	PRIMER	DESCRIPTION	PFP	DESCRIPTION	SEALER / TOPCOAT	DESCRIPTION
<b>Exterior / Interior Structural Steel - Primed Carbon Steel</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, piperacks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection), cryogenic protection against LNG spills and immersion exposures and explosion blast resistance</b>						
SP 3*	Qualified** Carbozinc Series -or- Carboguard Series -or- Carbomastic Series	Inorganic zinc -or- Zinc rich epoxy -or- Polyamide epoxy -or- Polyamide epoxy mastic	Pyrocrete 40  with lath where required***	40 lbs/ft <sup>3</sup> (pcf) (640 kg/m <sup>3</sup> ) Portland cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane
<b>Exterior / Interior Structural Steel - Galvanized Steel</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection, cryogenic protection against LNG spills and immersion exposures and explosion blast resistance)</b>						
SP 1*	No primer required	N/A	Pyrocrete 40  with lath where required***	40 lbs/ft <sup>3</sup> (pcf) (640 kg/m <sup>3</sup> ) Portland Cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane
<b>Exterior / Interior - Existing Concrete</b>						
<b>Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon fire or jet fire protection (1-4 hour UL 1709 hydrocarbon fire protection, Up to 2 hour ISO 22899-1 jet fire protection, cryogenic protection against LNG spills and immersion exposures and explosion blast resistance)</b>						
SP 1*	Carboguard 1340	Penetrating epoxy sealer/topcoat	Pyrocrete 40  with lath where required***	40 lbs/ft <sup>3</sup> (pcf) (640 kg/m <sup>3</sup> ) Portland Cement based fireproofing	Qualified** Carboguard 1340 -or- Carboguard 1340 + Carbothane 133 Series (optional)	Penetrating epoxy sealer/topcoat -or- Penetrating epoxy sealer/topcoat + Satin finish high build urethane

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.  
 \*\* Primers or primer systems must be pre-qualified by Carboline prior to use. Primed steel must meet minimum UL bond strength criteria. Contact Carboline Technical Service for further information. Pyrocrete materials do not require a topcoat per UL 1709, but topcoats are routinely used for added system durability.  
 \*\*\* 3.4 lb./yd<sup>2</sup> galvanized metal lath is typically utilized for most UL 1709 designs. Pyrocrete 40 has no lath design XR707 available. Lath is attached by means of pneumatic galvanized fasteners or welded pins. Plastic nosed corner bead can also be utilized as a construction aid. Refer to UL design for details or contact Carboline Technical Service for further information.  
**Note:** All terminations are sealed using Acrilast Silicone Caulk.  
**Note:** Physical properties and product durability increase with higher density cementitious products.

# Epoxy Intumescent Fireproofing

Thermo-Lag 3000 / Pyroclad X1

Epoxy Based Passive Fire Protection (PFP) for Land Based Structural Steel Substrates

PREP	PRIMER	DESCRIPTION	PFP	DESCRIPTION	TOPCOAT	DESCRIPTION
<b>Exterior Structural Steel - Primed Carbon Steel</b>						
Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring 1-4 hour UL 1709 hydrocarbon fire protection and explosion blast resistance						
SP 6*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Thermo-Lag 3000*** -or- Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carboguard 1340 + Carbothane 133 Series -or- Carbomastic 94 -or- Carbothane 134 Series	Penetrating epoxy sealer/topcoat + Satin high build urethane weatherable finish -or- Polyamide epoxy mastic -or- polyurethane weatherable finish
<b>Exterior Structural Steel - Galvanized Steel</b>						
Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring 1-4 hour UL 1709 hydrocarbon fire protection and explosion blast resistance						
SP 6*	Carboguard 893 SG**	Polyamide epoxy	Thermo-Lag 3000*** -or- Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carboguard 1340 + Carbothane 133 Series -or- Carbomastic 94 -or- Carbothane 134 Series	Penetrating epoxy sealer/topcoat + Satin high build urethane weatherable finish -or- Polyamide epoxy mastic -or- polyurethane weatherable finish
<b>Exterior Structural Steel - Carbon Steel or Galvanized Steel</b>						
Applications - Onshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring jet fire protection (ISO 22899-1) and explosion blast resistance						
SP 6*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Pyroclad X1***	High solids epoxy based intumescent	Carbothane 134 Series (optional)	High gloss polyurethane weatherable finish

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.

\*\* Primers systems and topcoat systems must be pre-qualified by Carboline prior to use. Contact Carboline Technical Service for further information.

\*\*\*Pyroclad X1 requires Carboline's High Temp Mesh. Thermo-Lag 3000 requires Carboline's FP-Fiberglass Mesh. Contact Carboline Technical Service for further information.

# Epoxy Intumescent Fireproofing

Pyroclad X1 / Thermo-Lag 3000

Epoxy Based Passive Fire Protection (PFP) for Offshore Structural Steel Substrates

PREP	PRIMER	DESCRIPTION	PFP	DESCRIPTION	TOPCOAT	DESCRIPTION
<b>Exterior Structural Steel - Primed Carbon Steel</b>						
Applications - Offshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon pool fire protection (ISO 834) and/or jet fire protection (ISO 22899-1), explosion blast resistance and NORSOK M-501 System 5A Revision 6 compliance						
SP 10*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series -or- Carbocrylic Series -or- Carboxane 2000 -or- Carbomastic Series (optional)	High gloss polyurethane weatherable finish -or- Acrylic epoxy weatherable finish -or- Modified siloxane hybrid -or- Polyamide epoxy mastic
<b>Exterior Structural Steel - Galvanized Steel</b>						
Applications - Offshore exterior structural steel, primary support structures, pipe racks, storage vessels and vessel supports requiring hydrocarbon pool fire protection (ISO 834) and/or jet fire protection (ISO 22899-1), explosion blast resistance and NORSOK M-501 System 5A Revision 6 compliance						
SP 10*	Carboguard 893 SG**	Polyamide epoxy	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series -or- Carbocrylic Series -or- Carboxane 2000 -or- Carbomastic Series (optional)	High gloss polyurethane weatherable finish -or- Acrylic epoxy weatherable finish -or- Modified siloxane hybrid -or- Polyamide epoxy mastic
<b>Exterior Structural Steel - Primed Bulkheads and Decks (H-0, H-60, H-120)</b>						
Applications - Offshore exterior structural steel bulkheads / decks requiring hydrocarbon pool fire protection (ISO 834), explosion blast resistance and NORSOK M-501 System 5A Revision 6 compliance						
SP 10*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series -or- Carbocrylic Series -or- Carboxane 2000 -or- Carbomastic Series (optional)	High gloss polyurethane weatherable finish -or- Acrylic epoxy weatherable finish -or- Modified siloxane hybrid -or- Polyamide epoxy mastic

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.

\*\* Primers systems and topcoat systems must be pre-qualified by Carboline prior to use. Contact Carboline Technical Service for further information.

\*\*\*Pyroclad X1 requires Carboline's High Temp Mesh. Thermo-Lag 3000 requires Carboline's FP-Fiberglass Mesh. Contact Carboline Technical Service for further information.

# Epoxy Intumescent Fireproofing

Pyroclad X1 / Thermo-Lag 3000

Epoxy Based Passive Fire Protection (PFP) for Offshore Structural Steel Substrates

PREP	PRIMER	DESCRIPTION	PFP	DESCRIPTION	TOPCOAT	DESCRIPTION
<b>Exterior Structural Steel - Primed Bulkheads and Decks (H-0, H-60, H-120)</b>						
<b>Applications - Offshore exterior structural steel bulkheads / decks requiring hydrocarbon pool fire protection (ISO 834) and explosion blast resistance</b>						
SP 10*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Thermo-Lag 3000***	High solids epoxy based intumescent	Qualified** Carboguard 1340 + Carbothane 133 Series -or- Carbomastic 94	Penetrating epoxy sealer/topcoat + Satin high build urethane weatherable finish -or- Polyamide epoxy mastic
<b>Exterior Structural Steel - Primed Bulkheads and Decks (J-30, J-60, J-120)</b>						
<b>Applications - Offshore exterior structural steel bulkheads / decks requiring hydrocarbon pool fire protection (ISO 834) and/or jet fire protection (ISO 22899-1), explosion blast resistance and NORSOK M-501 System 5A Revision 6 compliance</b>						
SP 10*	Qualified** Carboguard Series -or- Carbomastic Series -or- Carbozinc Series -or- Carbozinc 11 + Carboguard Series	Polyamide epoxy -or- Polyamide epoxy mastic -or- Zinc rich epoxy -or- Inorganic zinc + Polyamide epoxy	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series -or- Carbocrylic Series -or- Carboxane 2000 -or- Carbomastic Series (optional)	High gloss polyurethane weatherable finish -or- Acrylic epoxy weatherable finish -or- Modified siloxane hybrid -or- Polyamide epoxy mastic

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.

\*\* Primers systems and topcoat systems must be pre-qualified by Carboline prior to use. Contact Carboline Technical Service for further information.

\*\*\*Pyroclad X1 requires Carboline's High Temp Mesh. Thermo-Lag 3000 requires Carboline's FP-Fiberglass Mesh. Contact Carboline Technical Service for further information.

# Electrical Cable Fire Protection

Thermo-Lag 270

Fire resistive protective coatings for electrical cables

PREP	PRIMER	DESCRIPTION	CABLE COATING	DESCRIPTION	TOPCOAT	DESCRIPTION
<b>Exterior / Interior Electrical Cables</b>						
<b>Applications - Applied directly to electrical cables to provide up to 90 minute circuit integrity, 2 hour flame propagation protection, 0% ampacity derating and a Class A (Class 1) designation. Meets International and North American cable protection standards and provides fire resistive jacket around electrified cables</b>						
SP 1*	No primer required	N/A	Thermo-Lag 270**	Water based fire resistive cable coating	No topcoat required	N/A

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.

\*\* Factory Mutual (FM Global) and International Electrotechnical Commission (IEC) certified.

# Epoxy Syntactic Insulation

Carbotherm 730 + Thermo-Lag 3000 / Carbotherm 731 + Pyroclad X1

Insulative epoxy syntactic materials + PFP for hot and cold substrates

PREP	PRIMER	DESCRIPTION	INSULATION	DESCRIPTION	PFP	DESCRIPTION	TOPCOAT	DESCRIPTION
<b>Exterior Structural Steel - Primed Carbon Steel</b>								
<b>Applications - Onshore exterior structural steel, pipe racks, storage vessels, vessel supports, piping and duct work requiring thermal protection with continuous operating temperatures between -40°F (-40°C) and 175°F (79°C), hydrocarbon fire protection (UL 1709 or ISO 834) and explosion resistance</b>								
SP 6* (onshore)	Carboguard 890**	Polyamide epoxy	Carbotherm 730	High solids epoxy syntactic insulation	Thermo-Lag 3000***	High solids epoxy based intumescent	Qualified** Carboguard 1340 + Carbothane 133 Series -or- Carbomastic 94	Penetrating epoxy sealer/topcoat + Satin finish high build urethane -or- Polyamide epoxy mastic
<b>Exterior Structural Steel Beams, Columns - Galvanized Steel</b>								
<b>Applications - Onshore exterior structural steel, pipe racks, storage vessels, vessel supports, piping and duct work requiring thermal protection with continuous operating temperatures between -40°F (-40°C) and 175°F (79°C), hydrocarbon fire protection (UL 1709 or ISO 834) and explosion resistance</b>								
SP 6* (onshore)	Carboguard 893 SG**	Polyamide epoxy	Carbotherm 730	High solids epoxy syntactic insulation	Thermo-Lag 3000***	High solids epoxy based intumescent	Qualified** Carboguard 1340 + Carbothane 133 Series -or- Carbomastic 94	Penetrating epoxy sealer/topcoat + Satin finish high build urethane -or- Polyamide epoxy mastic
<b>Exterior Structural Steel - Primed Carbon Steel</b>								
<b>Applications - Offshore and onshore exterior structural steel, pipe racks, storage vessels, vessel supports, piping and duct work requiring thermal protection with continuous operating temperatures between -40°F (-40°C) and 302°F (150°C), jet fire (ISO 22899-1) and/or hydrocarbon fire protection (UL 1709 or ISO 834), explosion blast resistance and NORSOK M-501 System 5A Rev. 6 compliance</b>								
SP 6* (onshore) SP 10* (offshore)	Carboguard 890**	Polyamide epoxy	Carbotherm 731	High solids epoxy syntactic insulation	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series (optional)	High gloss polyurethane weatherable finish
<b>Exterior Structural Steel - Galvanized Steel</b>								
<b>Applications - Offshore and onshore exterior structural steel, pipe racks, storage vessels, vessel supports, piping and duct work requiring thermal protection with continuous operating temperatures between -40°F (-40°C) and 302°F (150°C), jet fire (ISO 22899-1) and/or hydrocarbon fire protection (UL 1709 or ISO 834), explosion blast resistance and NORSOK M-501 System 5A Rev. 6 compliance</b>								
SP 6* (onshore) SP 10* (offshore)	Carboguard 893 SG**	Polyamide epoxy	Carbotherm 731	High solids epoxy syntactic insulation	Pyroclad X1***	High solids epoxy based intumescent	Qualified** Carbothane 134 Series (optional)	High gloss polyurethane weatherable finish

\* Substrate must be clean and free of all dust, dirt, oil, grease and contaminants prior to application.

\*\* Primers systems and topcoat systems must be pre-qualified by Carboline prior to use. Contact Carboline Technical Service for further information.

\*\*\*Pyroclad X1 requires Carboline's High Temp Mesh. Thermo-Lag 3000 requires Carboline's FP-Fiberglass Mesh. Contact Carboline Technical Service for further information.

**NOTES:**

1. This document is meant as a general guideline only. For product information and application details, refer to the individual product's datasheet and application manual (latest revision) or contact Carboline Technical Service.
2. Carbothane 133 Series topcoats used with Carboline fireproofing products consists of: Carbothane 133 HB, and Carbothane 133 MC. These are used where VOC regulations dictate. All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use.
3. Carbothane 134 Series topcoats used with Carboline fireproofing products consists of: Carbothane 134 HP, and Carbothane 134 HG All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use
4. Carboguard Series used with Carboline fireproofing products consists of: Carboguard 635, Carboguard 890, Carboguard 893, Carboguard 893 SG, Carboguard 60 and Carboguard 1340. When used as a tie-coat over Carbozinc 11, Carboguard Series refers to Carboguard 893 or Carboguard 893 SG. All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use.
5. Carbocrylic Series used with Carboline fireproofing products consists of: Carbocrylic 1290, Carbocrylic 1295 HS. All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use.
6. Carbomastic Series used with Carboline fireproofing products consists of: Carbomastic 15, Carbomastic 242, Carbomastic 615, and Carbomastic 94 and Carbomastic 18 FC. All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use.
7. Carbozinc Series used with Carboline fireproofing products consists of: Carbozinc 858, Carbozinc 858 Global, Carbozinc 859 and Carbozinc 11. Carbozinc 11 requires a polyamide epoxy tie-coat primer. All must be pre-qualified for use for each specific application and environment by Carboline in writing prior to use.
8. Where lath is required, use 3.4 lb/yd<sup>2</sup> galvanized steel or stainless steel lath. PVC coated wire mesh can also be used as an alternate.
9. Carboline's Surface Cleaner 3 is a water based cleaner that is effective in cleaning and degreasing surfaces prior to painting.
10. Carboline fireproofing products must be installed according to the appropriate test design or certification.



**CARBOLINE COMPANY**  
**GLOBAL HEADQUARTERS**  
2150 SCHUETZ ROAD  
ST. LOUIS, MO 63146 USA  
PH: +1-314-644-1000  
[WWW.CARBOLINE.COM](http://WWW.CARBOLINE.COM)