



Fireside 258

PRODUCT DISCRIPTION:

Fireside 258 is a double component ceramic coating specifically formulated to promote thermal efficiency while preventing high temperature corrosion and erosion of carbon steel and stainless steel substrates. The coating is a high solids system that can be applied to a dry film thickness of .020 (500+ microns).

Fireside 258 is thermally conductive and bonds well to properly prepared steel substrates. Process heat is contained within the coating allowing Fireside 258 to be used as a thermal management coating to increase thermal efficiency.

Fireside 258 can be applied to both carbon and stainless steels and will not oxidize in service. The coating acts as a physical barrier, preventing the oxidation of the steel substrates exposed to high heat environments while retarding the build up of tenacious scale that can obstruct heat flow.

Fireside 258 is very stable and will neither outgas, nor cause skin irritations like many other high temperature coatings.

Working properties of the coating exhibit an extended pot life prior to exposure to air. After mixing the coating can be stored and re-mixed and applied for up to 120 days. Upon curing Fireside 258 becomes a hard durable ceramic coating that will provide protection of steel substrates to 1700° F (927° C).

PHYSICAL PROPERTIES:

Mohs scale relative hardness = 6.5 -7

Vickers = 828

Color	Grey
Finish	Flat
Maximum service temperature	1700° F (926° C)
Bond Strength	2,940 psi
Tensile Strength	3,050 psi

Note: Physical properties were determined on specimens prepared under laboratory conditions using applicable ASTM procedures. Actual field conditions may vary and yield different results; therefore data is subject to reasonable deviation.

CHARACTERISTICS:

- Resistant to 1,700° F (926° C)
- Resistant to severe cyclic conditions
- Resistant to sliding and impact erosion and corrosion
- Absorbs and radiates energy
- Coating thickness can be monitored with standard MLO equipment
- Resist gases, oils, solvents and most acids
- Non-toxic and odorless
- High density
- Good mechanical bonding
- High thickness build coating
- High emissivity
- Reduces fly ash abrasion
- Resistant to high temperature oxidation
- Non-flammable

INDUSTRIES:

- Power Plants
- Go-generation
- Chemical Facilities
- Cement Plants
- Pulp and Paper
- Steel Processing
- Waste to Energy Plants
- Refineries

USES:

- PC boiler water wall tubes
- Gas and oil fired furnaces
- Nose arch and slope tubes
- Recovery boiler water walls
- Superheater and reheater tubes
- Biomass tube surfaces
- Waste heat boilers
- Ducts and piping
- Exhaust systems (over 800 F)
- Economizer tubes

SPECIFICATION DATA:

Components	2- (Powder and Liquid)
Dry Time between coats @ 50% R.H., 70° F	1 hour
Volume Solids	94%
Theoretical Coverage @ 1 mil. D.F.T.	500 square ft./gal.
Thinning liquid	Non required
Metal Temperature during application	50° F – 150° F
Weight per gallon	16.6 lb
Storage Temperature	33° - 100° F (0.5° - 38° C)
Shelf life prior to mixing	18 months
Shelf life after mixing	120 days
Final Cure Temperature	+ 600° F (315° C)

SURFACE PREPARATION:

Surfaces to be coated must be dry and free of all weld splatter, oil, dirt, grease, liquor and all other contaminants. Round off all rough welds and sharp edges. Metal substrates should be abrasive blasted to a SSPC-SP5/NACE1 (white blast) specification. Blast profile should be 2 – 3 mils in depth. Garnet or other hard sharp materials are recommended for abrasive blasting.

MIXING:

Use mechanical agitation for initial mixing (a disperser with high speed sheer blade is recommended). Mix continuously during application. Mix materials until smooth and uniform in consistency. Screen the material before spraying. It is also recommended that a screen be placed on the “suck” tube of the paint pot or airless spray system before application. During application adjust the mixing speed to allow for material suspension without cavitations.

EQUIPMENT:

A conventional spray pot with a mechanical mixing system or an airless spray system is required. When airless spray equipment is used the recommended liquid pressure is 1800-2000 psi with tip size from .027-.030. Air supply shall be uncontaminated.

Adjust pressure as needed. Hold gun 12” to 14” from the surface at right angles. Lap each pass 50%.

APPLICATION INSTRUCTIONS:

Surface temperature must be a minimum of 5° F (3° C) above the dew point. Do not apply to steel temperatures below 35° F (1.7° C).

All of the following application instructions are based on applying Fireside 258.

Mechanically mix **all** of component “B” (Powder) into component “A” (Liquid) and continuously mix for 5 minutes using a shear blade impeller. Allow the coating to set for 10 minutes before applying. Fireside 258 is pre-measured and it is important that all of powder in the kit be mixed with all of the liquid. After initial mixing the coating can be stored in separate containers if required,

Note: Spraying is recommended but if applying by brush for testing purposes etc., mechanically mix the coating at least once every two minutes during application, this will allow the components to remain suspended in the mix. Apply each coat separately and do not try to smooth any runs after the coating has began to dry. Allow each coat to completely dry to touch before applying the next coat.

.004 to .005 per coat can be achieved during spraying. Typically, Fireside 258 is applied .015 to .020 (380-508 microns) thick. Thicker coating is not recommended. Do not allow coating thickness to exceed .024 (600 microns) thick. Contact Fireside Coatings technical service at 904-742-2593 for additional information.

WARNING! Do not thin Fireside 258 with any thinner or water as poor coating characteristics will occur.

Application to hot surfaces (+200° F, 93° C) tends to promote dry spray and may cause blistering to occur. Fireside 258 normally dries by ambient air drying. If the temperature is below 70° F (93° C) and the humidity is high slower drying will occur. Low temperature oven or heat drying may be used to accelerate the drying time. Do not exceed 200° F (93°C) during accelerated drying.

Fireside 258 should be applied in subsequent coats of .004 to .005 mils per coat. Each coat must fully dry to for at least one hour before the subsequent coats are applied. If a heater is used to accelerate drying, assure that the temperature does not exceed 200° F (93° C). Allow all coats to completely dry before additional coats are applied.

CURING:

Before starting cure, allow the coating to dry for minimum 24 hours at + 50 deg. F. (10 deg. C) In most cases Fireside 258 can be cured using normal boiler start up procedures.

If controlling the curing procedure do not exceed 200° F (93° C) for the first hour. After one hour the coating can be accelerated 200° F (93° C) per hour until full temperature is achieved. The coating can be placed in service after exceeding 600° F (315° C)

CLEAN-UP:

Water is used to clean ceramic from pump and hoses. All equipment should be cleaned with water before the coating dries.

CAUTION:

Consult Material Safety Data Sheets and container label caution statements for any hazards in handling this material.

