

Cease-Fire®



Product Description

Cease Fire 2000 is a unique, two-component refractory foam. The dry powder (component A) is mixed with water to form a semi-viscous slurry and then combined with mild phosphoric acid (component B) at the pumping nozzle. The reaction produces a foam of approximately 1½ times its original volume. The process involves the generation of moderate heat from which evolves non-toxic gaseous by-products resulting in a network of independent cellular pores. The fast setting time of Cease Fire alleviates the need for extended drying or curing times. Since the reaction is complete, steam spalling on the initial fire is not a concern.

The Cease Fire Fast Aide Kit consists of premeasured amounts of Components A and B to place approximately 1.3 cu. ft. of Cease Fire 2000. The components are packaged in a 6-gallon drum which serves as the mixing vessel. After removing the components, water is added to a depth 7½" from the bottom of the drum. Dry component A is mixed with the water to create a slurry. Component B, an acid catalyst contained in a one gallon cube, is then added to this mixture. Proper amounts of each component are provided with the Fast Aide Kit to meter at a 4 to 1 ratio (slurry to acid) through the Cease Fire 100 Pump.

Features

Cease Fire 2000

- Fluid nature readily fills backup insulation voids
- Highly insulating foam product (thermal conductivity equivalent to ceramic fiber)
- Easily installed while unit is on or off-line
- Unique pore structure allows for controlled crushing instead of catastrophic cracking
- Suitable for use up to 2000°F (1093°C)

Cease Fire Fast Aide Kits

- Convenient, pre-packaged quantity of Cease Fire 2000
- Ideal for small hot spot repair

Applications

- Utility boilers:
 - penthouse floors and walls
 - superheater penetration
- Iron and Steel
 - blast furnace stoves, hot blast mains, and bustle pipes
 - soaking pit sidewalls
 - coke oven backup and seals

Estimation of Material Required

1. Estimate total volume (cubic feet) to be filled.
2. Multiply volume by 41 pcf (density of Cease Fire 2000) to obtain total weight of material required.
3. Most applications of Cease Fire 2000 are difficult to estimate because exact condition of existing backup insulation is unknown. Therefore, in determining material quantity, a significant overage should be used (typically 15 - 30%).
4. After the total weight of Cease Fire 2000 is determined, quantities of Component A and B are ordered as follows:
 - Component A - total weight x 0.75 = order quantity
 - Component B - total weight x 0.25 = order quantity

Packaging

Component A (dry)	50 lb/bag (23 kg)
Component B (acid)	200 lb/drum (91 kg)

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Physical Properties

Design Temperature Use Limit, °F (°C)	2000 (1093)
Average lb Required to Place 1 ft ³ (kg), dry	41 (19)
Density, dry, pcf (kg/m ³)	39 - 47 (625 - 753)
Compressive Strength, psi (Mpa) dried 10% compression	20 - 40 (0.14 - 0.28)
Permanent Linear Change, % 5 hr @ 220°F (93°C)	0
@ 1000°F (538°C)	-1.3
@ 2000°F (1093°C)	-2.5
Slurry Consistency, wt. %, (solids content)	66
Slurry: Acid Ratio	
by weight	4.5:1
by volume	4.0:1
Foam characteristics	
rise time @ 70°F (21°C) sec.	30-90
initial set time (sec.)	60-120
% volume increase	50
Shelf life, months	12

Chemical Analysis, %, Weight basis after firing

Alumina, Al ₂ O ₃	34
Silica, SiO ₂	34
Calcium oxide, CaO	12
Titanium oxide, TiO ₂	1.2
Ferric oxide, Fe ₂ O ₃	0.8
Phosphorous oxide, P ₂ O ₃	16
Other	1.0

Thermal Conductivity, BTU•in/hr•ft²•°F (w/m•k), ASTM C417

Mean temperature 300°F (149°C)	0.75 (0.11)
700°F (371°C)	0.96 (0.14)
1100°F (593°C)	1.22 (0.18)

The values given herein are typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Thermal Ceramics office to obtain current information.