

Cease-Fire® VT600



Product Description

Cease-Fire VT-600 is a unique, three component refractory foam specially designed for re-insulating structures like pipes where long pumping distances are involved. The product consists of a dry powder (Component A) mixed with water and a wet waterproofing agent (Component C) in large 200 gal. mixing hoppers to form a semi-viscous slurry. This slurry is then combined with a mild acid (Component B) at the pumping nozzle which produces a foaming reaction of approximately 50% greater than its original volume. The quick setting time of the foam alleviates the need for extended drying or curing times.

Cease-Fire VT-600 has been used to re-insulate long pipe sections in underground steam lines where the existing mineral wool, calcium silicate or asbestos insulation has deteriorated over time. It has excellent fluidity and resistance to ground water penetration after it takes a set. Cease-Fire VT-600 can be pumped up to 100 linear feet depending on pipe elevation and restrictions from old insulation. This minimizes the number of excavations with manholes and small entry points generally used. A specially designed VT-600 Pump and multi-hopper system delivers the Cease-Fire material at a rate of 12 – 15 gal. / minute into the pipe. Numerous installations have been done at major power companies with excellent ground water sealant and insulation results.

Features

- Fluid nature pumps long distances
- Highly insulating closed cell foam product
- Resists groundwater penetration
- Minimizes street disruption with easy injection
- Easily installed while steam line is on or off-line
- Suitable for use up to 2000°F (1093°C)

Applications

- Underground steam and hot water piping systems:
 - public utility companies
 - schools and universities
 - hospitals
 - military bases

Estimation of Material Required

1. Estimate total volume (cubic feet) to be filled.
2. Multiply volume by 38 pcf to obtain total dry and wet weight of material required.
3. After the total weight of Cease Fire VT-600 is determined, quantities of Component A, B and C are ordered as follows:
 - Component A - total weight x 0.76 = order quantity
 - Component B - total weight x 0.24 = order quantity
 - Component C - Component A x 0.10 = order quantity
4. Most applications of Cease Fire VT-600 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%).

Packaging

Component A (dry)	50 lb/bag or 1500 lb/supersacks (23 kg or 681 kg)
Component B (acid)	200 lb/drum (91 kg)
Component C (wet)	50 lb/drum (23 kg)

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Physical Properties

	Cease-Fire VT600
Continuous use limit, °F (°C)	2000 (1093)
Dried density, pcf (kg/m ³)	37 (17)
Compressive strength, psi (Mpa) dried 10% compression	30 - 40 (0.21 - 0.28)
Linear shrinkage % 5 hr @ 220°F (93°C)	0.0
@ 1000°F (538°C)	1.0 to 1.5
@ 2000°F (1093°C)	2.0 to 3.0
Slurry consistency, wt. %, (solids content)	66
Slurry: Acid Ratio by weight	5:1
Average foam characteristics	
viscosity at nozzle with acid	very thin
rise time @ 70°F (21°C) min.	2 - 3
initial set time (min.)	3 - 4
% volume increase	50
Shelf life, months	6

Chemical Analysis, % weight basis after firing

Alumina, Al ₂ O ₃	34
Silica, SiO ₂	35
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)
500°F (260°C)	0.6 (0.086)
700°F (371°C)	0.8 (0.12)
900°F (482°C)	0.9 (0.13)
1100°F (593°C)	1.0 (0.14)

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.