Atlas Minerals & Chemicals, Inc.

DATA SHEET

8-56SU (1-99[2])
Supersedes 8-56SU (6-98)

VITROBOND® ANCHOR BOLT SETTING COMPOUND

DESCRIPTION AND USES

VITROBOND is a plasticized, hot-pour silica filled, sulfur based mortar. It is easily melted, pours smoothly and is dense and strong. It has the necessary qualities of a setting compound for securely and permanently anchoring bolts and threaded studs in concrete for fastening machinery, handrails, partitions, etc. VITROBOND offers the following advantages:

- Twice as strong as concrete.
- Sets hard within minutes. Ready to be put to use as soon as it has cooled.
- Resistant to vibration, thermal shock or physical shock.
- Excellent adhesion to steel, iron and concrete.
- The low viscosity of VITROBOND at the pouring temperature allows the product to completely fill the irregularity between the hole in the concrete and the anchor bolt.
- Can be stored for years; will not deteriorate in any way.
- Not affected by outdoor weathering.
- No waste—what is melted but not used can be allowed to cool, then remelted later and used.
- Low cost.
- No mixing, therefore, no possibility of low strength because of improper mixing.

PACKAGING

50 lb. (22.7 kg.) cartons containing ingots

PREPARATION OF VITROBOND

Break up ingots and place in a suitable clean, dry kettle. Melt over low heat, stirring occasionally with metal rod or ladle. Recommended pouring temperature is from 275°F (135°C) to 295°F (146°C). Use of a thermometer is suggested for best results. Discard material if heated above 320°F (160°C) or if ignited. Sulfur fires can be extinguished by covering with wet burlap to cut off air supply and removing heat source. If molten VITROBOND foams due to entrapped air, continue heating and stirring until smooth again.

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	136 lb./cu. ft. (2.18 g./cc.)
Tensile Strength, 48 hours @ 77°F (25°C)	ASTM C307	700 psi. (4.83 MPa)
Compressive Strength, 48 hours @ 77°F (25°C)	ASTM C579	7,000 psi. (48.3 MPa)
Flexural Strength, 48 hours @ 77°F (25°C)	ASTM C580	1,800 psi. (12.4 MPa)
Coefficient of Thermal Exp., in./in./°F (cm./cm./°C)	ASTM C531	2.1×10^{-5} (3.8×10^{-5})
Shear Strength (in concrete), 4 days @ 77°F (25°C)	ATLAS	> 5,000 lb.* (2,268 kg.)
Strength Retained after Thermal Shock	ASTM C287	400 psi. (2.75 MPa)
Tend. of Aggregate to Settle, Max. Variation from Unity	ASTM C287	0.15
Color		Dark Gray

*More than 5,000 lb. is required to pull a 1/2" diameter pipe anchored into a 4" deep x 2.5" wide cylindrical hole in new concrete.

PROCEDURE FOR USE

1. Drill hole--allow clearance between bolt or stud as listed in following table. Carbaloy or other special concrete drills do a fast, clean job. Remove dust and loose particles with compressed air, a battery filler or a bulb syringe.
2. Place bolt in hole, head down. If using threaded stud, center in hole.
3. Pour using a small ladle or a can with the sides pinched to form a "V" pouring spout. Fill the hole in one continuous pour. At the end of the pour, the VITROBOND should be slightly above the surface of the concrete.

PRODUCT SPECIFICATION

The system shall be VITROBOND as manufactured by Atlas Minerals & Chemicals, Inc.

PRECAUTIONS

The materials referred to in this Data Sheet are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Material Safety Data Sheets and the container labels for complete precautionary information.

STORAGE

VITROBOND can be stored indefinitely without deteriation.

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ESTIMATING TABLE - VITROBOND

D (in.)	L (in.)	H (in.)	T (in.)	VITROBOND (lb. / hole)
1/4 in.	1-1/4	5/8	540	0.03
3/8	2	3/4	1,360	0.06
1/2	2-1/2	1	2,520	0.13
5/8	3-1/2	1-1/8	4,040	0.22
3/4	4-1/2	1-1/4	6,040	0.34
7/8	5-3/4	1-3/8	8,380	0.49
1	7	1-1/2	11,020	0.68
1-1/8	7-1/2	1-3/4	13,860	1.03
1-1/4	8	2	17,800	1.44
1-3/8	9	2-1/8	21,080	1.80
1-1/2	10-1/2	2-1/4	25,880	2.25
1-3/4	12-1/2	2-1/2	34,880	3.17
2	15	2-3/4	46,000	4.40

Note: If square or hex bolts are used, the diameter of the hole in the concrete must be increased to accept the head.

D = Diameter of threaded carbon steel stud
L = Length of embedment in concrete and VITROBOND
H = Diameter of hole needed in concrete
T = Total tensile force that the embedded stud will readily withstand

TECHNICAL SERVICES

ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of difficulties with the application of ATLAS materials, the installation should be stopped immediately and ATLAS' Technical Service Department consulted for assistance.

WARRANTY

ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS' LIABILITY FOR ALLEGED BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS). ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES DURING THE WARRANTY PERIOD OR THEREAFTER. **ATLAS' WARRANTY IS VOIDED IF PAYMENT FOR PRODUCT IS NOT RECEIVED IN FULL.**

Note: Atlas makes it a practice to continuously update and enhance our CCM (Corrosion Resistant Construction Materials) products. This may result in slight discrepancies between our printed Data Sheets and the current version. For the most recent version of any Data Sheet, please visit our Web site at www.atlasmin.com