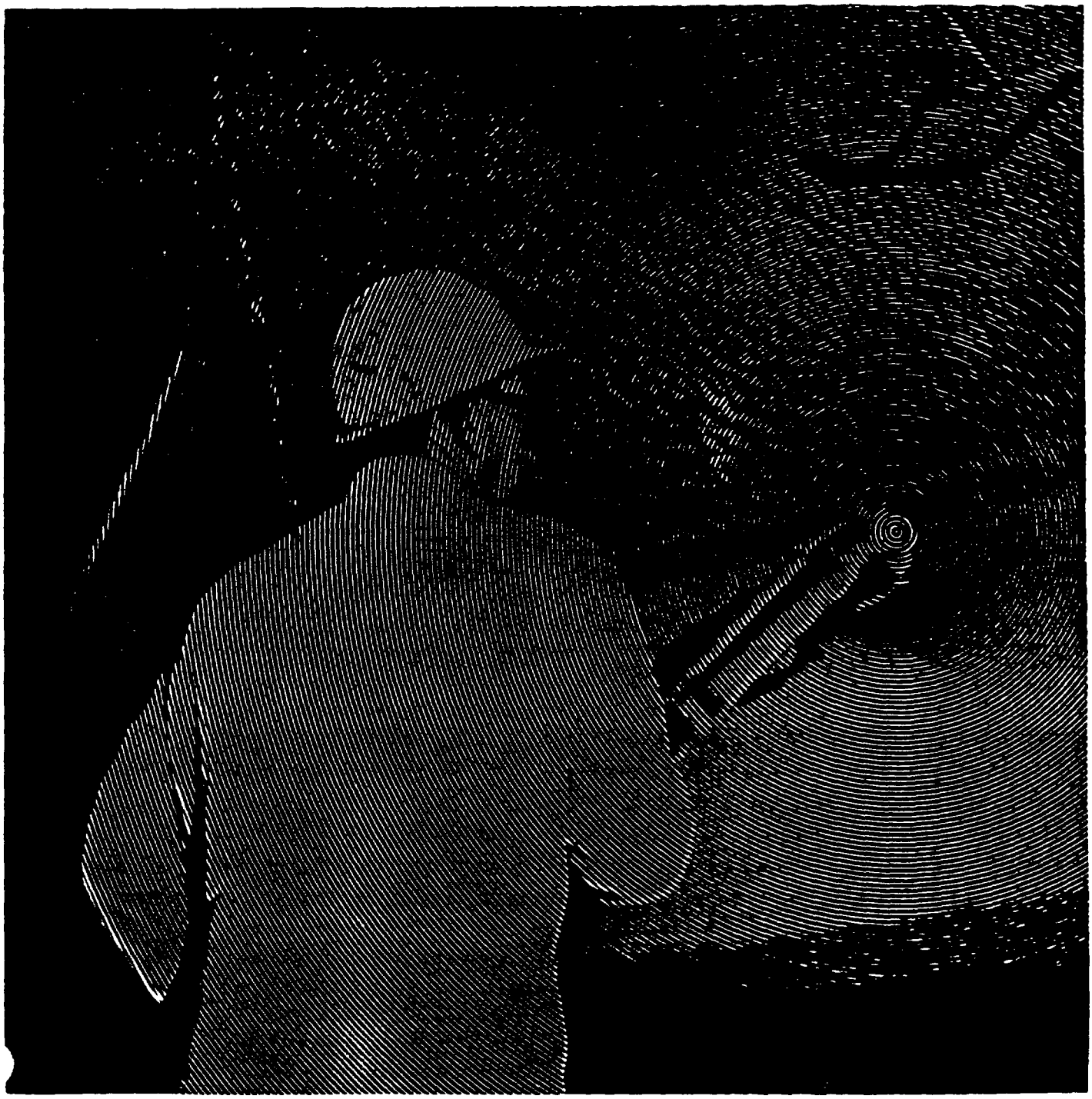
PLAINTIFF'S EXHIBIT
WRG-61

ZONOLITE® FIREPROOFING
MONO-KOTE®

04505818



Construction Products Division
W. R. Grace & Co.

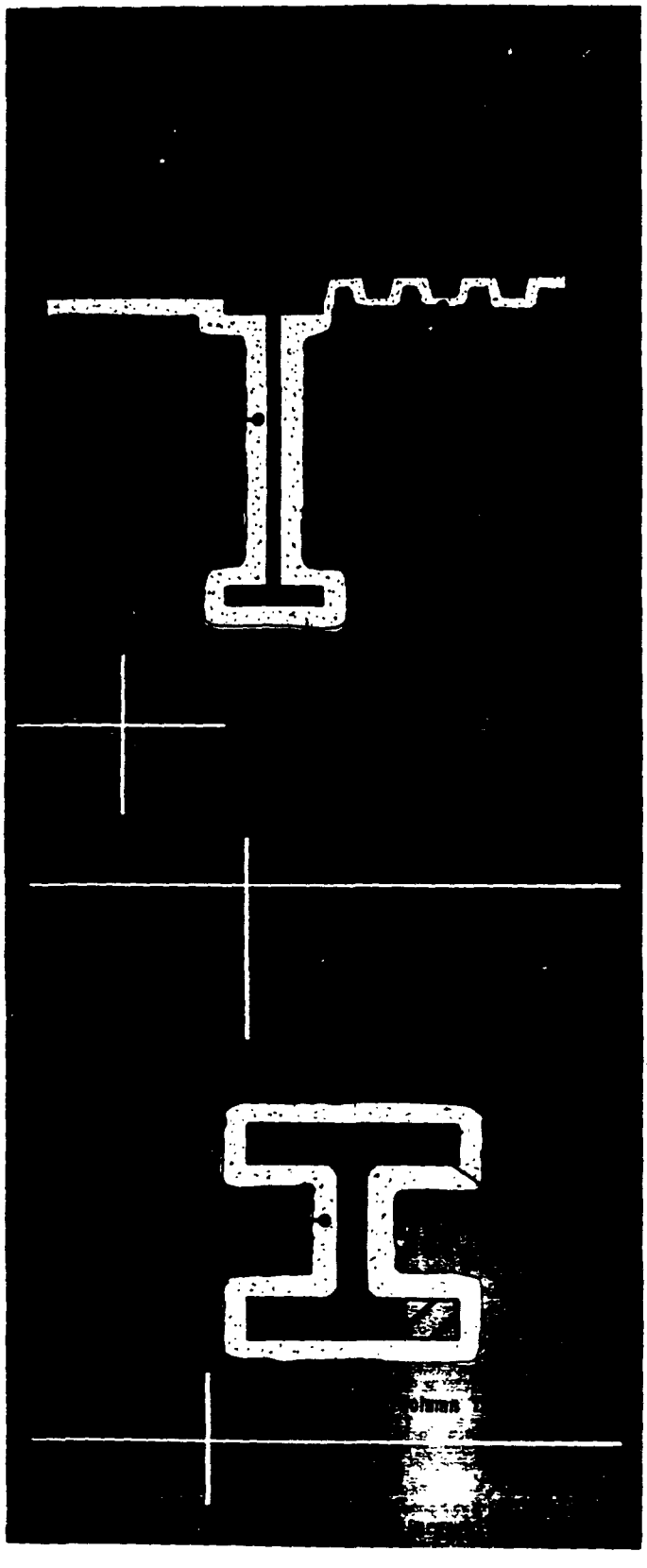
MONO-KOTE CEMENTITIOUS FIREPROOFING
Vermiculite Perlite and Plaster Aggregate

W. R. GRACE & CO.
GRACE
ZONOLITE
CONSTRUCTION PRODUCTS DIVISION

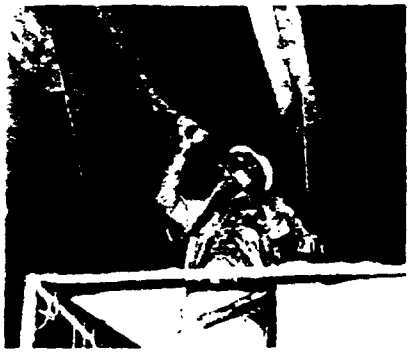
Mono-Kote®

cementitious spray-applied fireproofing

04502819



Mono-Kote is the trade name for a fire protection material developed by Construction Products Division, W. R. Grace & Co., specifically for fast application, high fire resistance, and low cost. The material is spray applied by any one of several plastering machines. Mono-Kote is a cementitious (plaster), mill-mixed material requiring only the addition of water at the job. It is applied directly to steel, concrete and other surfaces requiring fire protection.



Machine-applied cementitious Mono-Kote withstands air erosion, prevents "dusting" in air-conditioning and ventilating systems.

technical data

FIRE RESISTANCE: Mono-Kote has been fire tested and rated by Underwriters' Laboratories, Inc., in accordance with test method ASTM E-119. Fire ratings up to 4 hours have been achieved. Each bag of material bears the UL label verifying compliance with UL's quality control inspection program and the appropriate fire resistance rating. The reports and details of these tests are available upon request.

IN 1970, A MAJOR REVISION TO TEST METHOD E-119 WAS ACCEPTED BY ASTM AND UL. BASICALLY, THE REVISION (1) INTRODUCES A NEW SYSTEM FOR RATING THE HOURLY PERFORMANCE OF ASSEMBLIES AND STRUCTURAL MEMBERS AND (2) PROVIDES FOR TWO RATINGS FROM THE SAME FIRE TEST. THE UNDERWRITERS' LABORATORIES INDEX OF FIRE RESISTANCE RATINGS WILL, IN GENERAL, REFER TO TWO RATINGS — ONE BASED ON TIME-TEMPERATURE PERFORMANCE AND THE OTHER BASED ON A COMBINATION OF STRUCTURAL AND LESSER TIME-TEMPERATURE PERFORMANCE CRITERIA. BECAUSE LOCAL BUILDING CODES MAY NOT YET HAVE ADOPTED THIS NEW UL CRITERIA, CONTACT THE JURISDICTIONAL MUNICIPAL AUTHORITY FOR VERIFICATION.

Mono-Kote has been tested for other properties such as corrosion resistance, deflection, bond impact, surface hardness, etc. The test results comply with G.S.A. requirements and are available upon request.

FIRE HAZARD: Tested and reported in accordance with ASTM E-84 by Underwriters' Laboratories, Inc. Flame Spread-10, Fuel Contributed-5, Smoke Developed-0.

DRY DENSITY: Approximately 22 p.c.f.

RESISTANCE TO AIR EROSION: Independent laboratory test subjected standard, machine-applied Mono-Kote surface to winds exceeding hurricane velocity . . . over 100 M.P.H. for 87 hours . . . with no erosion. Copies of test description available.

SPECIFICATION (SHORT FORM): Sprayed fireproofing material shall be Mono-Kote as manufactured by Construction Products Division, W. R. Grace & Co., or its processing distributor. It shall be applied by machine to the thickness required by local codes and in the areas shown on the drawings. The method of mixing and application shall comply with the manufacturer's recommendations.

specifications

1. SCOPE

a) Work Included

Provide all labor, materials and equipment required for complete installation of all sprayed fireproofing and related work as shown on the drawings or specified herein, and in accordance with all applicable requirements of the Contract Documents.

b) Work Not Included

1. Structural steel encased in concrete.
2. Trowelled plaster fireproofing as specified under appropriate section.
3. The cleaning of the surfaces to receive sprayed fireproofing.

c) Codes and Regulations

This specification shall be supplemented by the applicable requirements of the Building Codes and all authorities having jurisdiction. Conflicts and/or discrepancies between Contract Documents, ordinances, etc., noted by the subcontractor shall be immediately brought to the architect's attention.

2. MATERIALS

a) The sprayed fireproofing shall be plaster cementitious setting-type, and shall be Mono-Kote as manufactured by Construction Products Division, W. R. Grace & Co., or its processing distributors.

All manufactured materials shall be mill-mixed and shall be delivered in original, unopened packages bearing the manufacturer's name and the Underwriters' Laboratories, Inc. label.

The materials shall be stored off the ground, under cover, and away from damp surfaces. Materials shall be kept dry until ready for use. Materials that have been exposed to water before actual use shall be discarded.

b) Water shall be clean, fresh and free from organic and mineral impurities which would be harmful to the sprayed fireproofing materials.

3. ACCEPTANCE AND PERFORMANCE CRITERIA

a) The sprayed fireproofing shall have been tested by Underwriters' Laboratories, Inc. in accordance with the procedures of ASTM E-119. The structural steel members shall be protected with adequate fireproofing thicknesses and densities to provide the following fire resistance ratings:

Steel columns	-Hours
Primary steel members (Girders)	-Hours
Secondary steel members (Beams)	-Hours

b) The sprayed fireproofing beneath the deck assembly together with adequately proportioned concrete fill above the metal decking shall provide a hour fire resistant deck assembly as substantiated by a fire test in accordance with the procedures of ASTM E-119, and performed by Underwriters' Laboratories, Inc.

c) The fireproofing material shall not be subject to losses from the finished application by sifting, flaking or dusting. This performance shall be measured by the results of a test for erosion resistance when subjected to high velocity air flow across the surface of dried samples. The samples thus tested must be representative of machine applied material similar to that which can be expected on the project. The air velocity shall be not less than feet per minute, and the duration of the test shall be at least hours.

Note to Specifier:

Recommended Quality Criteria:

TESTS

a) The architect will select and the owner will pay an independent testing laboratory to sample and verify the density of the direct-to-steel fireproofing as applied.

b) Contractor shall control thickness, utilizing a workable depth gauge to meet minimum thickness as required. He shall cooperate with the owner's inspector in furnishing samples for tests.

4. SAMPLES

Samples of sprayed fireproofing shall be submitted for approval in accordance with the applicable provisions of the Special Conditions. These samples shall be representative of the material as applied in accordance with Acceptance & Performance Criteria as stated below.

5. INSTALLATION

a) Application of sprayed fireproofing shall be in accordance with the printed instructions of the material manufacturer and the fire test report information.

b) Upon request a qualified manufacturer's representative can be present for initial application to guide and assist applicator's personnel.

c) All surfaces to which sprayed fireproofing will be applied shall be free of oil, grease, dirt, loose paint, mill scale or any other matter which would impair bond.

d) All clips, hangers, supports, sleeves and other attachments to the fireproofing bases, as covered under other sections of the specifications, are to be placed by others prior to the application of the fireproofing material, where these attachments can be anticipated in advance.

e) All patching and repairing of sprayed fireproofing, due to cutting by other trades, shall be performed under this section and paid for by the trade(s) that performed the cutting.

6. TEMPERATURE AND VENTILATION

When the prevailing outdoor temperature at the building site is less than 40°F, an interior temperature of 40°F shall be maintained for 24 hours before and 24 hours after application of Mono-Kote.

The plastering contractor shall provide natural ventilation to properly dry the Mono-Kote during and subsequent to its application. In glazed buildings, this shall be accomplished by keeping windows open approximately 2" top and bottom (or side pivoted windows approximately 4") to provide air circulation; and in enclosed areas or buildings lacking openings for natural ventilation, by circulating exterior air and exhausting it to the outside by use of temporary circulators, exhaust fans or the air-conditioning system.

7. CLEAN-UP

After completion of fireproofing work, equipment shall be removed and all wall and floor areas cleaned of deposits of sprayed fireproofing materials.

Zonolite® plants and sales offices

LISTED BELOW GEOGRAPHICALLY ARE THE MARKETS SERVED BY ZONOLITE® MONO-KOTE® FIREPROOFING FACILITIES.

ARIZONA
Phoenix 85031, P. O. Box 14279, (602) 272-6663

ARKANSAS
North Little Rock 72114, P. O. Box 294, (501) 945-1678

CALIFORNIA
LOS ANGELES
Los Angeles 90039, 5440 San Fernando Rd. West, (213) 245-6491
SAN FRANCISCO-OAKLAND
Newark 94560, P. O. Box 217, (415) 793-9111

COLORADO
Denver 80223, 111 South Navajo Street, (303) 722-5707

FLORIDA
Boca Raton 33432, P. O. Box 67, (305) 395-3103
Jacksonville 32202, 1530 East Adams St., (904) 355-8431
Tampa 33605, P. O. Box 5047 Ybor Station, (813) 248-1554

GEORGIA
Atlanta 30340, 6300 Button Gwinnett Dr., (404) 448-5880

HAWAII
Honolulu 96819, 842-A Mapunapuna Street, (808) 895-105

ILLINOIS
CHICAGO
Chicago 60643, 12300 South Ashland Ave., (312) 389-4900
Wilmette 60091, 3201 Old Glenview Rd.

KANSAS
Wichita 67214, 616 Pennsylvania, (316) 264-6251

KENTUCKY
LOUISVILLE
Wilders, Newport 41071, 112 North St., (606) 291-3500

LOUISIANA
New Orleans 70121, P. O. Box 10262, (504) 834-5817

MARYLAND
BALTIMORE/WASHINGTON, D.C.
Beltsville 20705, P. O. Box 347, (301) 953-2863

MASSACHUSETTS
BOSTON
Cambridge, 02140, 62 Whittemore Ave., (617) 876-1400
SPRINGFIELD/WORCESTER
Easthampton 01027, P. O. Box 112, (413) 527-1890

MICHIGAN
DETROIT
Dearborn 48121, 14300 Henn Avenue, (313) 846-1010

MINNESOTA
Minneapolis 55413, 1720 Madison St., N.E., (612) 789-2327

MISSOURI
St. Louis 63110, 1705 Sulphur Avenue, (314) 645-8786

MONTANA
Great Falls 49401, P. O. Box 1419, (406) 453-1291

NEBRASKA
Omaha 68107, 3520 "I" Street, (402) 731-3662

NEW JERSEY
Trenton 08619, P.O. Box 2124, 15 Industrial Drive, (609) 587-2570; (609) 587-2571

NEW MEXICO
Albuquerque 87107, P. O. Box 6302, (505) 345-1633

NEW YORK
NEW YORK CITY
New York City 10017, 51 East 42nd Street, (212) 661-3085
ROCHESTER/SYRACUSE
Weedsport 13166, P. O. Box 310, (315) 834-7971

NORTH CAROLINA
High Point 27260, P. O. Box 1308, (919) 883-9575

NORTH DAKOTA
Minot 58702, P. O. Box 1782, (701) 838-1991

OHIO
CLEVELAND
Cleveland 44113, 1125 West 11th Street, (216) 621-3517
CINCINNATI
Wilders, Newport, Kentucky, 41071, (606) 291-3500

OKLAHOMA
Oklahoma City 73111, P. O. Box 11402, (405) 232-2058

OREGON
Portland 97227, 2303 North Harding Street, (503) 288-5195

PENNSYLVANIA
PITTSBURGH
New Castle 16102, 202 East Cherry Street, (412) 654-7723
PHILADELPHIA
Trenton, N. J. 08619, P.O. Box 2124, 15 Industrial Drive, (609) 587-2570; (609) 587-2571

PUERTO RICO
San Juan 00905, P. O. Box 4007, (809) 782-3080

SOUTH CAROLINA
GREENVILLE/SPARTANSBURG
Travelers Rest 29690, P. O. Box 517, (803) 834-7272

TENNESSEE
Nashville 37204, 4061 Powell Avenue, (615) 242-5496

TEXAS
Dallas 75222, P. O. Box 6306, (214) 637-0900
Houston 77008, P. O. Box 7327, (713) 869-6663
San Antonio 78204, P. O. Box 9114, (512) 223-5781

UTAH
Salt Lake City 34110, P. O. Box 2398, (801) 328-0117

WASHINGTON
SEATTLE/TACOMA
Auburn 98002, P. O. Box A, (206) 852-5725
SPOKANE
Spokane 99201, North 1318 Maple Street, (509) 325-2541

WISCONSIN
Milwaukee 53208, 900 North 43rd Street, (414) 344-6667

CANADA

ALBERTA
Calgary 21, 701 Briggs Avenue, (403) 265-6622
Calgary, 1240 Tenth Avenue, S.W., (403) 244-0811

BRITISH COLUMBIA
Vancouver 15, 109 East 69th Avenue, (604) 327-0485
Vancouver, 460 Industrial Avenue, (604) 683-0534

MANITOBA
Winnipeg 10, 760 Wall Street, (204) 786-5681

NOVA SCOTIA
Truro, 1145 East Prince Street

ONTARIO
Toronto, 3349A Bloor Street, West, (416) 233-1271

QUEBEC
Montreal 379, 140 Deslauriers, (514) 332-0520

SASKATCHEWAN
Regina, 1035 Angus Street, (306) 569-3808

ZONOLITE PRODUCES OTHER PLASTER AND FIREPROOFING PRODUCTS. WRITE FOR THESE DATA SHEETS
PA-97R Zonolite Vermiculite Plaster Aggregate
PA-96R Zonolite Perlite Plaster Aggregate

W. R. GRACE & CO.

GRACE

ZONOLITE

CONSTRUCTION PRODUCTS DIVISION

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