

TECHNICAL DATA SHEET

DESCRIPTION

The D490 High Strength Splicing Grout is a specially formulated cement based, nonmetallic, non-shrink grout designed for the grouting of the Dayton Superior D390 Taper-Lock™ Grout Sleeve.

USE

D490 High Strength Splicing Grout is designed for heavy duty applications where high strengths are required. The grout, when used in conjunction with the D390 Taper-Lock™ Grout Sleeve, makes up a unique fully integrated system from Dayton Superior Corporation.

FEATURES

- High early compressive strength
- High ultimate compressive strength
- Non-metallic, non-staining, non-corrosive
- Resistant to water and salt penetration
- Pumpable

PROPERTIES

Meets Corps of Engineers Specification CRD-C621 for non-shrink grout

Meets ASTM C-1107: Specification for non-shrink grout

ASTM C827 Early Height Change: 0.6%

ASTM C1090 Expansion, 28 Days: 0.10%

ASTM C403 Initial Set: 120 min

ASTM C403 Final Set: 180 min

ASTM C666 Freeze/Thaw Durability: >95%

ASTM C1202 Chloride Permeability, 28 days: <500 coulombs

ASTM C882 Slant Shear Bond Strength:

3 days: 3,300 psi (22.8 MPa)

7 days: 6,500 psi (44.8 MPa)

28 days: 8,000 psi (55.1 MPa)

Test Results

| Test Results @ 40°F | | | | | | | |
|---------------------|-------|-------|-------|-------|-------|--------|-------|
| 1 Day | | 3 Day | | 7 Day | | 28 Day | |
| PSI | MPa | PSI | MPa | PSI | MPa | PSI | MPa |
| 5,850 | 40.33 | 7,240 | 49.92 | 9,410 | 64.88 | 10,980 | 75.70 |

| Test Results @ 75°F | | | | | | | |
|---------------------|-------|-------|-------|--------|-------|---------|------|
| 1 Day | | 3 Day | | 7 Day | | 28 Day | |
| PSI | MPa | PSI | MPa | PSI | MPa | PSI | MPa |
| 6,380 | 43.99 | 8,160 | 56.26 | 12,560 | 86.60 | 15,000+ | 109+ |

| Test Results @ 95°F | | | | | | | |
|---------------------|-------|-------|-------|--------|-------|---------|------|
| 1 Day | | 3 Day | | 7 Day | | 28 Day | |
| PSI | MPa | PSI | MPa | PSI | MPa | PSI | MPa |
| 6,570 | 45.30 | 9,390 | 64.74 | 13,340 | 91.98 | 15,000+ | 108+ |

Estimating Guide

Yield: 0.375 cubic feet (0.011 cubic meters) per 50 pound (22.7 kg) bag

Usage

| Splice Size | (mm) | Sleeves/Bag |
|-------------|------|-------------|
| #4 | (13) | 109 |
| #5 | (16) | 71 |
| #6 | (19) | 42 |
| #7 | (22) | 31 |
| #8 | (25) | 24 |
| #9 | (29) | 19 |
| #10 | (32) | 15 |
| #11 | (36) | 11 |
| #14 | (43) | 6 |
| #18 | (57) | 3 |

Packaging

| Product Code | Package Type | Size | |
|--------------|--------------|------|------|
| | | lbs | kg |
| 114287 | Bag | 50 | 22.7 |

TECHNICAL DATA SHEET**STORAGE**

Shelf life of unopened bags, when stored in a dry facility, is 12 months. Excessive temperature differential and/or high humidity can shorten the shelf life expectancy. Store in a cool, dry area free of direct sunlight.

Surface Preparation:

All materials should be conditioned to 40°F - 80°F (4°C - 27°C) 24 hours prior to installation. Maintain ambient and surface temperatures between 40°F (4°C) and 95°F (35°C). Set times and strength developments are dependent on temperature. All substrates must be clean, free from water, oils, dirt, debris or any other foreign matter prior to beginning grouting operation. For grouting using the port holes in the associated coupler, remove port plugs to prep for pumping of the grout. Inspect to ensure that no blockages exist within the coupler and the PVC tubing (if usage is applicable). Blow clean oil and water free air through the tubes to verify that no obstructions exist.

Water Requirements:

Mix a maximum of 3.1 liters (6.6 pints) per 50 lbs. (22.7 kg) Bag

Mixing

Only mix with clean potable water. Addition of cold water at high temperatures or warm water at low temperatures will aid in adjusting the mix temperature. Place 3/4 of desired mixing water, start mixer, then slowly add the dry material. After all of the powder has been added, slowly add the remaining 1/4 water until the desired consistency is achieved. Do not overwater the product as it will lead to segregation and bleeding.

Mix mechanically with a high torque electric drill. Do not exceed 600 rpm using a paddle type mixing blade or an appropriately sized mortar mixer. Mix for 3-5 minutes to ensure a uniform, lump-free consistency and place immediately.

Temperature

Recommended grouting temperature range is 40°F (4°C) to 80°F (27°C). This includes ambient, substrate, material and mixing water temperatures. Use cold water for mixing in warm temperatures and hot water for mixing in cooler temperatures. Maintain contact areas between 40°F (4°C) and 95°F (35°C) before grouting and during curing period for a minimum of 24 hours.

When grouting in cold weather below 50°F (10°C), follow instructions per ACI 306R Cold Weather Concreting. This guideline explains the process for heating panels and any associated components to 50°F (10°C) for proper curing of the grout.

Temperatures below 50°F (10°C) will increase the curing time and the time for grout to develop strength. High grouting temperatures may result in premature stiffening of the grout and difficulty in pumping.

Grout should NOT be placed/pumped into frozen concrete panels or any DSC grout connection splicing couplers.

Placement:

For pre-rebar installation grouting, pour or pump grout in a continuous operation into the sleeve, rodding continuously to remove entrapped air. For post-rebar installation grouting, pour or pump grout into inlet tubes in a continuous operation.

Continue pumping until grout exiting at the outlet tube flows freely with no air bubbles. Seal the outlet tube 1st, followed by sealing the inlet tube. Inspect and verify after grouting to ensure no voids exist.

CURING

Cure all exposed grout in accordance with ACI 308. A Dayton Superior curing compound meeting ASTM C-309 is recommended.

CLEAN UP

Wet grout can be cleaned with water. Once grout hardens, abrasive methods will be required.

LIMITATIONS**FOR PROFESSIONAL USE ONLY**

Do not re-temper after initial mixing.
Do not add other cements or additives.
Setting time for grout will slow during cold weather, less than 50°F (10°C) and speed up during hot weather, greater than 80°F (27°C).
Mix full bags only.

PRECAUTIONS**READ SDS PRIOR TO USING PRODUCT**

- Product contains Crystalline Silica and Portland Cement – Avoid breathing dust – Silica may cause serious lung problems
- Use with adequate ventilation

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- Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield)
- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements

MANUFACTURER

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WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.