



# Other Accessories

## Grout & Grout Tubes

### S52 WIL-X CEMENT GROUT

Conforms to ASTM C845-76 T

Wil-X is chemically compensated for shrinkage. It has a high bond value and is crack resistant for permanent installations. Because it is a cement-grout, it is non-explosive and has a long shelf life when kept dry.



94 lbs. bag

Compressive Strength  
Wil-X Cement Grout & Water  
(73° F Dry Environment)  
0.44 w/c ratio

| Time    | PSI   | MPa  |
|---------|-------|------|
| 1 Day   | 2,800 | 19.3 |
| 3 Days  | 6,400 | 44.1 |
| 7 Days  | 7,700 | 53.1 |
| 28 Days | 9,500 | 65.5 |



5 gallon, resealable, moisture proof, polypropylene pails

Wil-X may be used to build up leveling pads by simply mixing with sand or pea gravel. This mixture should not be run through the grout pump.

**Setting Time:** Gilmore Needles (ASTM C266). Initial set 45 minutes; final set 10 hours.

**Comparative compressive strength test in PSI** (modified ASTM C109) Actual strengths as mixed according to Williams Instructions range from 6,000 to 9,500 PSI depending on water content. Copy of ASTM Modification available upon request.

Note: Results based on a controlled laboratory environment. Jobsite results may vary based on temperature and w/c ratio.

### US Spec RA Grout

#### Product Description

US Spec RA Grout consists of specialty blended cements and admixtures to provide maximum flow, shrinkage compensation and extended working times in an aggregate free formulation where clearances are minimal. RA Grout is non-metallic and non-corrosive. RA Grout has been specifically formulated to meet and exceed the testing requirements of **ASTM C-1107** and US Army Corps of Engineers CRD C-621. When tested in accordance with ASTM C-827 RA Grout yields a controlled positive expansion.



#### Advantages

- Pumpable fluid grout for very tight clearances
- Non-bleeding
- Attains high compressive strengths at specified w/c ratios
- Extended working time for maximum pumping range
- Non-shrink from time of placement
- Thixotropic: High flow restored by agitation
- Encapsulates tendons, bolts or bars to protect from corrosion
- Consistent: Strict Quality Control testing and standards

| Time    | PSI    | MPa    |
|---------|--------|--------|
| 1 Day   | 4,500  | 31.02  |
| 7 Days  | 11,000 | 75.84  |
| 28 Days | 15,000 | 103.42 |

#### Packaging and Yield

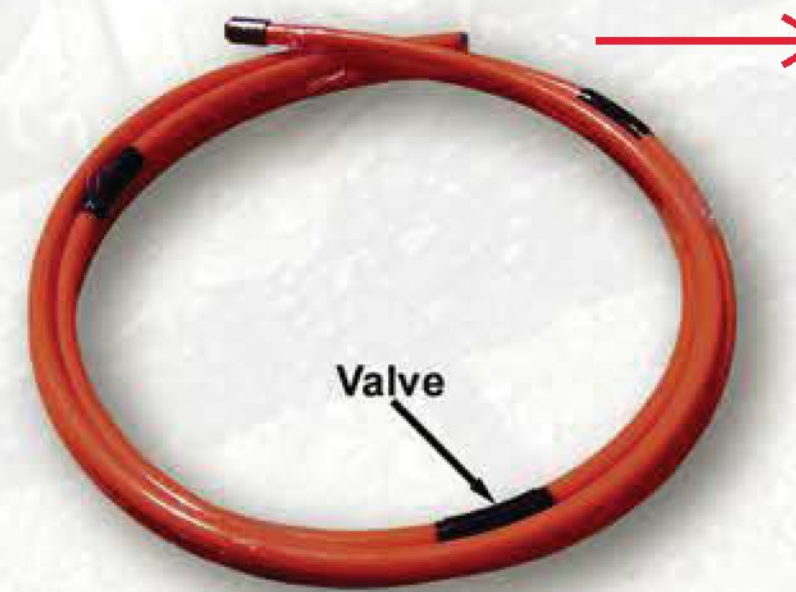
US Spec RA Grout is packaged in heavy duty, polyethylene line backs containing 50 lb (22.7 kg), yielding 0.53 cubic feet when 7.75 quarts of mixing water is used. Each pallet contains 48 bags of RA Grout.

#### Mixing

Mix US Spec RA Grout to a uniform consistency in accordance with the manufacturer's instructions. Potable water containing no chlorides or other foreign substance shall be used. The water shall be accurately measured and placed in the mixer first. Start with 1.94 gallons of water per 50lb bag of US Spec RA Grout and mix continuously for 3-5 minutes before placing. If possible, the grout should be mixed continuously until placing is completed, but if this is not practical, a brief remixing prior to pumping or placement is adequate to overcome the effect of "thixotropic set". Do not use any other admixtures or additives. a brief remixing prior to pumping or placement is adequate to overcome the effect of "thixotropic set".

### Post-Grout Tube

Williams will provide post-grout tubes for anchors bonded in weak rock or soil upon request. The Williams supplied flexible or rigid post-grout tube has a bursting strength of 1000 psi. The post-grout tube length and valve placement are adjustable and can be specified at the time of order. There is no field assembly of the post grout tube, other than attaching it to the anchor as it is being installed down the drill hole. Drill hole diameter should be a 1" minimum clearance to accommodate Post-Grout Tube.



Valve

### T3P Heavy Duty Plastic Grout Tube

Furnished in product lengths for the rockbolts or in rolls.



| O.D.                 | I.D.                   | Part No. |
|----------------------|------------------------|----------|
| 3/8"<br>(9.5 mm)     | 1/4"<br>(6.4 mm)       | T3P03002 |
| 1/2"<br>(12.7 mm)    | 3/8"<br>(9.5 mm)       | T3P04003 |
| 5/8"<br>(15.9 mm)    | 1/2"<br>(12.7 mm)      | T3P05004 |
| 3/4"<br>(19.1 mm)    | 5/8"<br>(15.9 mm)      | T3P06005 |
| 1" Nom.<br>(25.4 mm) | 3/4" Nom.<br>(19.1 mm) | T3P06    |

### T4Z Grout Tube Adapter



For down pressure grouting only when grout is forced through normal grout hole in the hollow bar.