



TECHNICAL DATA SHEET

AV-550 SOIL STRENGTHENER™

HYDROPHOBIC POLYURETHANE

DESCRIPTION

AV-550 Soil Strengthener™ is designed to permeate and stabilize various types of soil. This hydrophobic polyurethane increases the load bearing capacity of permeable soil by greatly increasing the cohesion between soil particles and by filling void areas in the soil. The uncured resin is a dark brown liquid which reacts when it comes in contact with water. **AV-550** is typically used with **AV-551 Soil Strengthener Cat™** to control the cure time. When the reaction occurs, a slight expansion of the resin is noticeable, and the material quickly cures to an open cell foam which is impervious to corrosive environments and microorganisms.

APPLICATION

- Stabilizing soil under concrete slabs, roadways, and other structures

FEATURES AND BENEFITS

- Solvent-free system
- Controllable reaction time with **AV-551 Soil Strengthener Cat**
- Withstands wet/dry cycles
- Extremely low viscosity

GROUTING TECHNIQUES

- Probe Grouting
- Tube-a-Manchette Grouting

HOW IT WORKS

AV-550 is a moisture-activated resin which cures to a very dense material. When injected into the soil, it comes into contact with water. The amount of catalyst and temperature of the water determines how quickly the resin cures.

PACKAGING

Product packaged by weight based on specific gravity.

- Drum Net Wt. 484 lbs. (220 kg)
- Pail Net Wt. 44 lbs. (20 kg)
- Gallon Net Wt. 8 lbs. (3.6 kg)

CATALYST

- **AV-551** – 32 fl. oz. container (approximately 1.88 lbs. (0.84 kg))
- **AV-551** – 5 gal. pails (approximately 37.5 lb. (17.0 kg))

SHIPPING

- Motor Class 55
- Non-Hazardous
- Air freight available

CLEANING PRODUCTS

- **AV-208** Technical Grade Acetone™ (CAS# 67-64-1) – removes moisture from equipment
- **AV-284** Pump Wash™ (Proprietary Blend) – removes uncured resin from pump and hose
- **AV-222** Cleaner™ (Proprietary Blend) – removes cured resin from equipment

STORAGE

Store between 45°F – 95°F (7°C – 35°C) in a dry atmosphere. Avoid water and humidity. Keep spouts closed. Packaged under dry nitrogen to keep moisture out and extend shelf life.

SAFETY

Always use OSHA-approved personal protective equipment (PPE). Refer to the SDS for complete safety precautions. The SDS is available by request or via download at avantigrout.com.

PROPERTIES*

AV-550 UNCURED

- Appearance: Amber liquid
- Corrosiveness: Non-Corrosive
- Viscosity: 25 cP ± 5 @ 68°F (20°C)
- Flash Point: C.O.C. 288°F (142°C)
- Solids: 90 – 98%
- Specific Gravity: 1.122 @ 72°F (22°C) ± 3%
- Density: 9.36 lbs./gal ± 3% 1,122 kg/m³ ±3%

AV-550 CURED

- Tensile Strength: 1,172 kPa (170 psi)
- Compressive Strength: 11,362 MPa (1648 psi in sand)
- Bending Strength: 2,544 kPa (369 psi)
- Bond Strength (bonding): 193 kPa (28 psi)
- Bond Strength (shear): 2,247 kPa (326 psi)
- Density: 1,074 kg/m³ (8.96 lbs./gal)
- Coefficient of Permeability: 4.98x10⁻⁶
- Shrinkage: 0%
- Toxicity: Non-toxic

AV-551 Soil Strengthener Cat

- Appearance: Yellowish liquid
- Viscosity: 25 cP @ 68°F (20°C)
- Flash Point: >255°F (>124°C)

*Laboratory Results

Gel (Cure) Times for AV-550 Soil Strengthener (Min:Sec)				
Temperature		Half Catalyst	Full Catalyst	Double Catalyst
	40 °F / 4 °C	3:21	2:41	1:20
	50 °F / 10 °C	3:04	1:56	1:20
	60 °F / 15 °C	2:49	1:52	1:20
	70 °F / 21 °C	2:45	1:50	1:20

MIX PROCEDURE

AV-551 Soil Strengthener Cat must be agitated by shaking the can prior to adding to resin. **Note: Do not allow AV-551 to freeze.** Depending on the desired reaction time, add up to 32 fl. oz. of **AV-551** to 5 gallons of **AV-550**. Mix thoroughly, but slowly, to avoid creating bubbles in the solution. Perform the standard cup test with site water to determine the desired reaction time.

PERFORMANCE

Flush equipment with **AV-208** before and after use to remove moisture and clean equipment. Performance will be influenced by site conditions. If site temperatures are low, heat the product to recommended operating temperatures of 60°F – 90°F (16°C – 32°C) and/or increase catalyst amount by 1% – 2%. Do not exceed more than 50 fl. oz. of **AV-551** per 5-gallon container of **AV-550**. Do not use open flame as a heat source. Excess amounts of **AV-551** may adversely affect performance. Because catalyzed resin will react to moisture from the air, use product soon after mixing for best results.

NOTICE

The data, information and statements contained herein are believed to be reliable, but are not construed as a warranty or representation for which Avanti International assumes any legal responsibility. Since field conditions vary widely, users must undertake sufficient verification and testing to determine the suitability of any product or process mentioned in this or any other written material from Avanti for their own particular use. **NO WARRANTY OF SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE.** In no case shall Avanti International be liable for consequential, special, or indirect damages resulting from the use or handling of this product.