

Michael Garn

From: Williams, Christopher D <Christopher.D.Williams@vermont.gov>
Sent: Monday, July 27, 2015 4:00 PM
To: Kevin Ture; Reed, Jeremy; Fitch, Jennifer; Mackintosh, Mark; 'Burbank, Scott' (SBurbank@VHB.com)
Cc: Michael Garn
Subject: RE: Concrete Repair
Attachments: Sikagard 550W Elastocolor-us.pdf

Kevin,

We have reviewed your response to written order #4 as described in your letter dated July 25, 2015, and have accepted your repair procedure with the following modifications.

- You must saw cut around the repair areas first to achieve the manufactures recommended minimum thickness. This will ensure that we don't have any feathered edges.
- Once the repairs are complete the entire area shall be coated with Sikagard. See the attached data sheet for your use and timing of application.
- The repair under the beam stem shall be completed first, to ensure proper cure prior to live loading of the bridge.
- The repair type shall be as directed by the RE for each location.

Christopher D. Williams
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christopher.d.williams@state.vt.us

From: Kevin Ture [<mailto:KTure@wmschultz.com>]
Sent: Monday, July 27, 2015 9:31 AM
To: Reed, Jeremy; Fitch, Jennifer; Mackintosh, Mark; 'Burbank, Scott' (SBurbank@VHB.com)
Cc: Williams, Christopher D; Michael Garn; Kevin Ture
Subject: Concrete Repair

All,

Please see attached proposed concrete repair procedure. Mike will also get on share point later today or first thing tomorrow.

Kevin Ture
Schultz Construction
Heavy Civil Construction
831 State Route 67 | Curtis Industrial Park

Sikagard® 550W Elastocolor

Description	Sikagard® 550W Elastocolor is an elastomeric, crack-bridging, anti-carbonation, acrylic protective coating. Sikagard® 550W Elastocolor provides protection to reinforced concrete from the ingress of carbon dioxide and other aggressive gasses. It offers high resistance to chlorides and other waterborne salts and excellent UV light resistance. Sikagard® 550W Elastocolor will not act as a vapor barrier and will enhance the appearance of the structure.
Where to Use	Protective, crack-bridging coating for concrete, mortar, stucco, masonry, and exterior finishing systems subject to cracking/dynamic movement. For use on building and civil engineering structures subject to cracking or as the top coat in complete repair and protection systems.
Advantages	<ul style="list-style-type: none"> ■ Can bridge dynamically moving cracks. ■ Excellent carbonation barrier. ■ Vapor permeable. ■ Provides resistance to weathering and frost. ■ Crack bridging properties maintained at low temperatures. ■ Excellent long term UV light resistance. ■ Can be applied by brush, roller, or airless spray. ■ Good color stability. ■ Extremely resistant to dirt pick up and mildew. ■ Non-flammable as a system. ■ Easily maintained silk finish.
Coverage	Theoretical yield per coat: 100 ft ² /gal/coat. Recommended 'wet' film thickness: 16 mils/coat. Recommended 'dry' film thickness: 8 mils/coat. Normal coating system is two coats at a total dry film thickness of 16 mils. Consumption is dependent on porosity of substrate. In addition, allowance must be made for surface profile, unavoidable variation in applied film thickness, loss and waste. Sikagard® Elastic Base Coat can be used as a first coat in a two coat system of Sikagard® 550W Elastocolor.
Packaging	5 gal. Hobbock.

Typical Data

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	2 years in original unopened container.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C) Condition material to 60°-75°F (15°-25° C) before using. Protect from freezing. If frozen discard.		
Colors	469 standard colors. Custom color-matching available.		
Pot Life	Indefinite, provided proper care is taken in protecting the system from moisture, freezing, contamination, or evaporation.		
Solids Content	by weight	by volume	
Smooth 550W	62%	55%	
Sikagard® 552W	20%	17%	
Tensile Properties (ASTM D-412 modified after 21 days cure)			
Tensile Strength	200 psi		
Elongation at Break	625% at 73°F (23°C)		
Tensile Strength at 0°F (-18°C)	1100 psi		
Elongation at Break at 0°F (-18°C)	225%		
Waiting Time (between coats) and Curing Rates	45°F (8°C)	68°F (20°C)	85°F (30°C)
Sikagard® 552W Primer+Sikagard® 550W	24 hours	12 hours	6 hours
Sikagard® 550W	12 hours	8 hours	6 hours
Rain resistant (at 75% R.H.)	24 hours	4 hours	2 hours
(Note: Over coating old coatings will increase the waiting times by 100%)			
Water Vapor Diffusion (at 16 mils = 400 microns dry film thickness)			
μ - value H ₂ O (diffusion coefficient) = 2,146			
SdH ₂ O (equivalent air thickness) = 2.6 ft. (0.8 m)			
Carbon dioxide diffusion (at 16 mils = 400 microns dry film thickness)			
*After 2,000 hours			
μ - value CO ₂ (diffusion coefficient) = 214,000			
R (equivalent air thickness) = 299 ft. (91 m)			
Sc (Equivalent concrete thickness) = 9 inches (23 cm)			
*accelerated weathering			
Crack-Bridging (at 16 mils = 400 microns DFT)			
Static (at -4°F/-20°C) 30 mils (0.75 mm)			
Dynamic >1000 cycles (at -4°F/-20°C) 12 mils (0.3 mm)			
Moisture Vapor Permeability (ASTM E-96) 14.5 Perms			

PRIOR TO EACH USE OF ANY SIKA PRODUCT, THE USER MUST ALWAYS READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS ON THE PRODUCT'S MOST CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET WHICH ARE AVAILABLE ONLINE AT [HTTP://USA.SIKA.COM/](http://usa.sika.com/) OR BY CALLING SIKA'S TECHNICAL SERVICE DEPARTMENT AT 800.933.7452 NOTHING CONTAINED IN ANY SIKA MATERIALS RELIEVES THE USER OF THE OBLIGATION TO READ AND FOLLOW THE WARNINGS AND INSTRUCTIONS FOR EACH SIKA PRODUCT AS SET FORTH IN THE CURRENT PRODUCT DATA SHEET, PRODUCT LABEL AND SAFETY DATA SHEET PRIOR TO PRODUCT USE.



Resistance to Wind Driven Rain (TT-C-555B)	No passage of water through the coating	
Flame Spread and Smoke Development (ASTM E-84-94)		
Flame Spread: 5	Smoke Development: 5	Class Rating: A
Weathering (ASTM G-23)	10,000 hours	Excellent, no chalking or cracking

How to Use

Surface preparation All surfaces to be coated must be dry, clean, sound, and frost free with curing compound residues and any other foreign matter removed. An open textured sandpaper like surface is ideal (CSP-3). Where necessary, surfaces should be prepared mechanically by blast cleaning or high speed pressure waterjetting. Allow adequate time for drying. Bug holes, cracks or irregularities of substrate should be filled and leveled with SikaTop®, SikaRepair®, SikaQuick® or acrylic surface fillers as appropriate. Cracks 1/32" or greater should be routed and sealed with a polyurethane sealant before coating.

Priming: All porous areas or concrete with excessive porosity should be primed using Sikagard® 552W Primer or SikaLatex® R to allow easy application of Sikagard® 550W Elastocolor.

Mixing Stir the coating to ensure uniformity using a slow speed (400-600 rpm) drill and 1/2" jiffy style mixing paddle. To minimize color variation when using multiple units, blend two pails of Sikagard® 550W Elastocolor. Use one pail and maintain the second pail to repeat this procedure (boxing) for the entire application.

Application Any areas of glass or other surfaces should be masked. Recommended application temperatures (ambient and substrate) 45°-95°F (7°-35°C). Sikagard® 550W Elastocolor can be applied by brush, roller, or spray over entire area moving in one direction. Allow a minimum of two hours prior to re-coating. At lower temperatures and high humidity, waiting time will be prolonged. At higher temperatures, work carefully to maintain a wet edge. As with all coatings, job site mock-ups should always be completed to confirm acceptability of workmanship, material and aesthetics.

NOTE: To achieve a dry film thickness of 16 mils, two coats should be anticipated. For maximum adhesion, (especially on porous substrates) the use of Sikagard® 552W is recommended. Sikagard® 552W primer can be applied by brush or roller. Brushing provides more even and pore free coats and better penetration.

- Limitations**
- Not designed for use as a traffic bearing surface.
 - Substrates must be dry prior to application.
 - Minimum age of concrete prior to application is 14 days, depending on curing and drying conditions (moisture content must be below 5%).
 - Minimum age of SikaTop®, SikaRepair®, or SikaQuick® prior to application is three days, depending on curing and drying conditions (moisture content must be below 5%).
 - Allow sufficient time for substrate to dry after rain or other inclement conditions.
 - Protect from freezing. If frozen, discard.
 - Sikagard® 550W Elastocolor should not be applied at relative humidity greater than 90%, or if rain is forecast within the specified rain resistance period.
 - Maximum crack width 1/32".
 - During application, regular monitoring of the wet film thickness and material consumption is advised to ensure that the correct layer thickness is achieved. When over-coating existing coatings, compatibility and adhesion testing is recommended.
 - When over-coating Sikaflex® sealants, a prime coat of Sikagard® 550W Elastocolor Accent Base Coat may be necessary over the sealant to minimize dirt pick up on cured coating.
 - Do not store Sikagard® 550W Elastocolor in direct sunlight for prolonged periods.
 - Strong winds can cause shrinkage if material is applied at lower temperatures.
 - Ensure that the primer is thoroughly dry before over-coating to prevent formation of bubbles and blisters, particularly in warmer weather.
 - Not recommended for roofing.

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KEEP CONTAINER TIGHTLY CLOSED. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. FOR INDUSTRIAL USE ONLY. FOR PROFESSIONAL USE ONLY.

For further information and advice regarding transportation, handling, storage and disposal of chemical products, users should refer to the actual Safety Data Sheets containing physical, ecological, toxicological and other safety related data. Read the current actual Safety Data Sheet before using the product. In case of emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at <http://usa.sika.com/> or by calling Sika's Technical Service Department at 800-933-7452. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.

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SCHULTZ

July 25, 2015

State of Vermont Agency of Transportation
Southwest Regional Construction Office
61 Valley View
Mendon, VT 05701

Attn: Chris Williams, R.E.

Re: *Castleton BRF 015-2 (10) – Written Order # 4*

Dear Mr. Williams:

This letter is in response to VTRANS Written Order # 4. Upon removal of forms for the rapid set closure pours on the inner sides of abutment # 1 & # 2 some voids were observed. We have evaluated the voids and determined that sufficient rapid set concrete has successfully been placed around the bearings to achieve the bearing capacity as designed. With the exception of the void in front of the bearing pad on Abutment #1, NB2, all other stems and bearing have no voids. On the NB2 void, the rapid set concrete has developed completely around the bearing pad except for the front void. Therefore it is our request that the repairs required will not be a determining factor for opening the bridge to traffic. It is WM Schulz's desire to make these repairs on Tuesday 7/28/15, if the repair procedure is acceptable.

WMSCI has developed and hereby respectfully proposes the following repair procedure. After consulting A H Harris a material supplier and Grout Tech a leading grouting contractor we have determined that we should propose that there should be 3 types of repair procedures as follows. Repairs will conform to VTRANS spec. section 580, Structural Concrete Repairs. Materials to be used for the repairs will conform to VTRANS spec section 780.

Repair Type A – This repair method will be used for all smaller voids and bug holes while filling the forming tie holes and general rubbing the surface for esthetics as ordered by RE. Use standard and typical concrete patching methods by hand troweling Sika 123 into the much smaller more vertical type voids.

Repair Type B – This repair method will be used for the larger voids such as in Abutment 1 south east corner and other locations as ordered by the RE. In these type repairs, there are no apparent air voids in and around the bearing. The void located on abutment 1 in the top portion and corner in between the stem and flange of the next beam, appears to be the largest void. The

repair procedure will include drilling a 1" diameter hole directly under the bottom flange to sound concrete. A form will be placed to hold the grout, and grout installed thru an insert hole in the form using a Kenrich pressure grout pump. Sika 212 material will be pumped into the void assuring the void is completely filled. The discharge end of the hose will be placed fully into the void and slowly drawn out as placement occurs. This will fill the void while pushing air out the main opening.

Repair Type C – There is only one location where the next beam and bridge seat did not have a good bond on Abutment #1, southwest corner under the fascia stem of the next beam. This repair method will include drilling a 1" hole under the next beam in the cast in place concrete and pressure grout Sika 212 until all voids are sufficiently filled. After the grout has completely filled the void under the bearing, the surface and remaining small portion of the void will top dress with Sika 123 vertical and overhead patching material.

We have attached product information sheets for Sika 212 grout & Sika 123 vertical and OH patching material, specifications for the Kenrich grout pump to be used and photos of the typical types of repair areas.

Should VTRANS have any suggested procedure that differs from the above, please let us know at your soonest convenience and we will promptly revise the repair procedures to comply with VTRANS's suggestions.

Thank you for your attention in this matter, we remain,

Very Truly Yours,

W.M. Schultz Construction, Inc.

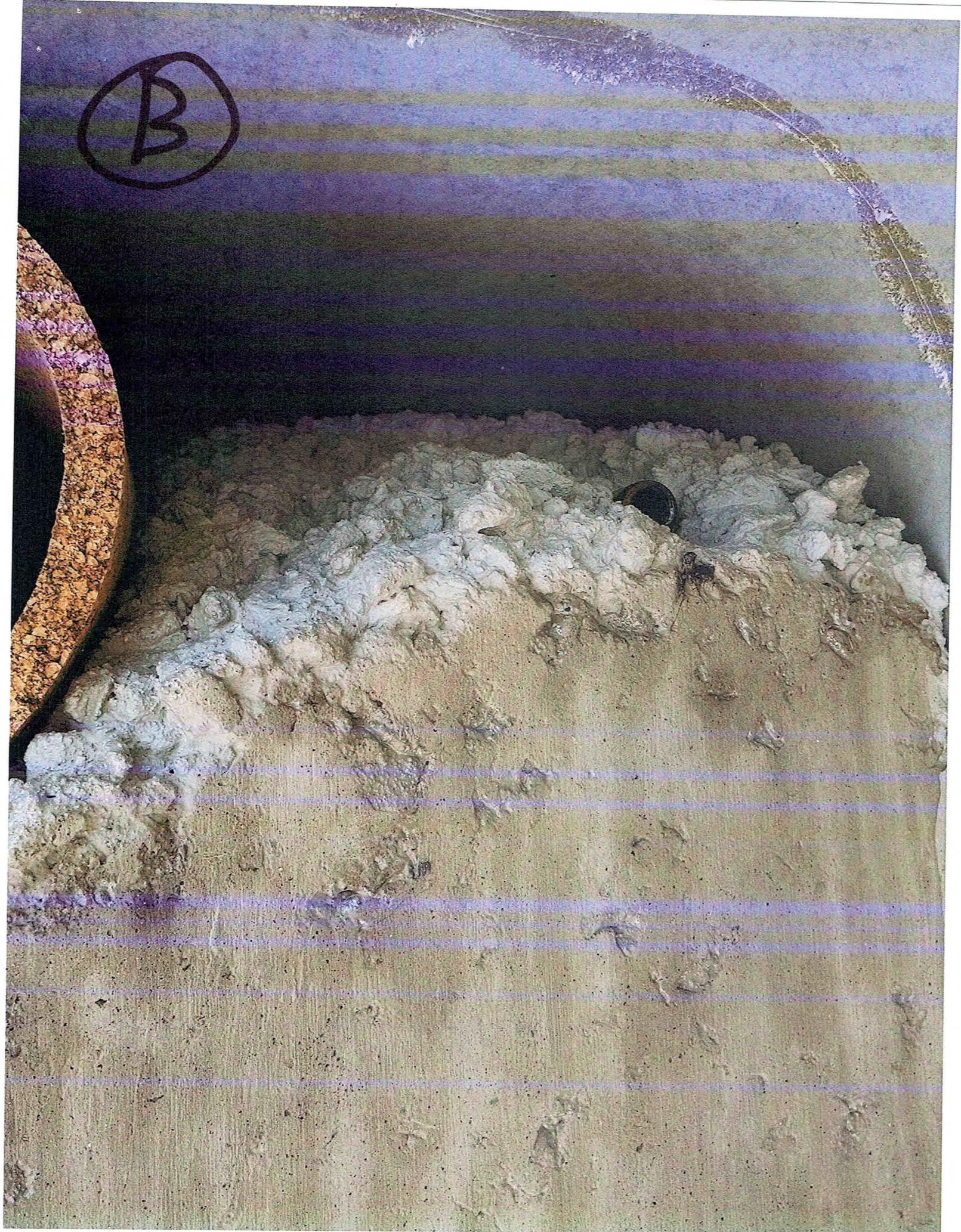


Kevin C. Ture
Project Manager

(A)

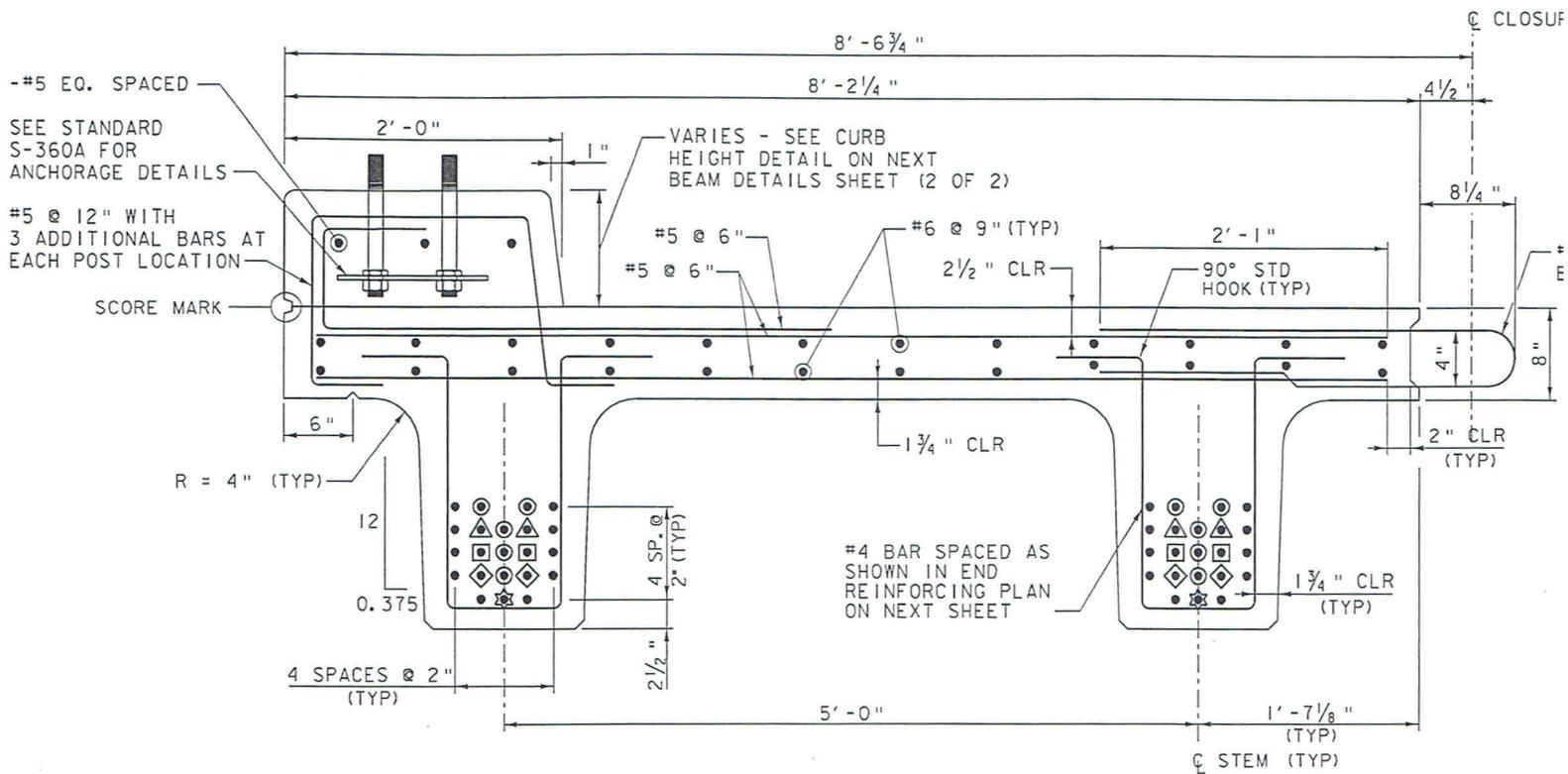
Typical of various
Locations

(B)



①

Under Beam Stem

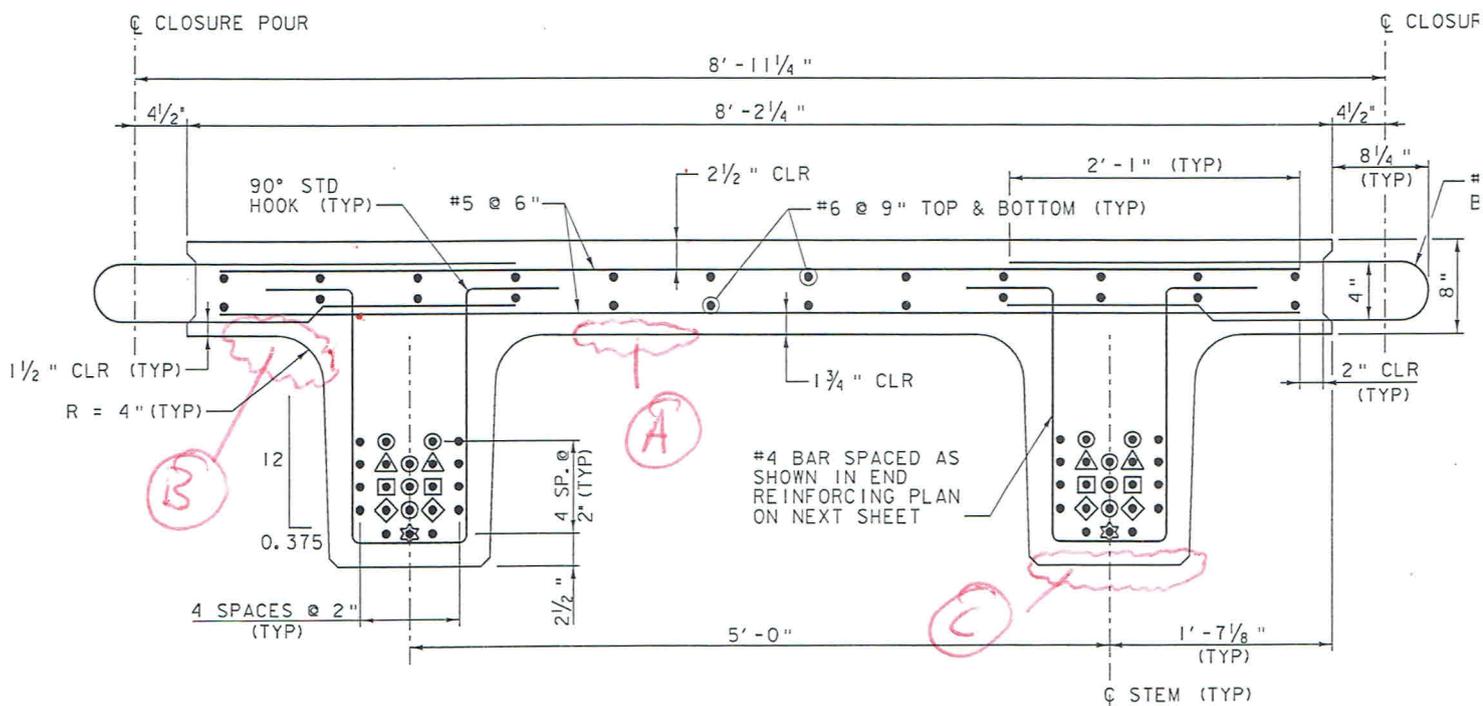


NOTE: CONTRACTOR TO PROVIDE THREADED INSERT IN NEXT BEAM FOR FLANGE CONNECTION. THREADED INSERT SHALL BE DESIGNED BY THE CONTRACTOR. (NOT SHOWN FOR CLARITY.)

NEXT 1 & 4

(BEAM 1 SHOWN, BEAM 4 HAS CURB OPPOSITE HAND)

SCALE 1/2" = 1'-0"



NOTE: CONTRACTOR TO PROVIDE THREADED INSERT IN NEXT BEAM FOR FLANGE CONNECTION. THREADED INSERT SHALL BE DESIGNED BY THE CONTRACTOR. (NOT SHOWN FOR CLARITY.)

NEXT 2 & 3

SCALE 1/2" = 1'-0"

SikaGrout® 212

High performance, cementitious grout

Description	SikaGrout 212 is a non-shrink, cementitious grout with a unique 2-stage shrinkage compensating mechanism. It is non-metallic and contains no chloride. With a special blend of shrinkage-reducing and plasticizing/water-reducing agents, SikaGrout 212 compensates for shrinkage in both the plastic and hardened states. A structural grout, SikaGrout 212 provides the advantage of multiple fluidity with a single component. SikaGrout 212 meets Corps of Engineers' Specification CRD C-621 and ASTM C-1107 (Grade C).
Where to Use	<ul style="list-style-type: none"> ■ Use for structural grouting of column base plates, machine base plates, anchor rods, bearing plates, etc. ■ Use on grade, above and below grade, indoors and out. ■ Multiple fluidity allows ease of placement: ram in place as a dry pack, trowel-apply as a medium flow, pour or pump as high flow.
Advantages	<ul style="list-style-type: none"> ■ Easy to use...just add water. ■ Multiple fluidity with one material. ■ Non-metallic, will not stain or rust. ■ Low bleed. ■ Low heat build-up. ■ Excellent for pumping: Does not segregate...even at high flow. No build-up on equipment hopper. ■ Non-corrosive, does not contain chlorides. ■ Superior freeze/thaw resistance. ■ Resistant to oil and water. ■ Meets CRD C-621. ■ Meets ASTM C-1107 (Grade C). ■ Shows positive expansion when tested in accordance with ASTM C-827. ■ SikaGrout 212 is USDA-approved.
Coverage	Approximately 0.44 cu. ft./bag at high flow.
Packaging	6 lb. pail, 6/case, 36/pallet; 50-lb. multi-wall bags; 36 bags/pallet.

Typical Data (Material and curing conditions @ 73°F (23°C) and 50% R.H.)

Shelf Life	One year in original, unopened bags.		
Storage Conditions	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.		
Color	Concrete gray		
Flow Conditions	Plastic¹	Flowable¹	Fluid²
Typical Water Requirements:	6 pt.+	6.5 pt.	8.5 pt.
Set Time (ASTM C-266):	Initial	3.5-4.5 hr.	4.0-5.0 hr.
	Final	4.5-5.5 hr.	5.5-6.5 hr.
Tensile Splitting Strength, psi (ASTM C-496)			
28 day	600 (4.1 MPa)	575 (3.9 MPa)	500 (3.4 MPa)
Flexural Strength, psi (ASTM C-293)			
28 day	1,400 (9.6 MPa)	1,200 (8.2 MPa)	1,000 (6.8 MPa)
Bond Strength, psi (ASTM C-882 modified): Hardened concrete to plastic grout			
28 day	2,000 (13.7 MPa)	1,900 (13.1 MPa)	1,900 (13.1 MPa)
Expansion % (CRD C-621)	28 day	+0.021%	+0.056%
			+0.027%
Compressive Strength, psi (CRD C-621)			
1 day	4,500 (31.0 MPa)	3,500 (24.1 MPa)	2,700 (18.6 MPa)
7 day	6,100 (42.0 MPa)	5,700 (39.3 MPa)	5,500 (37.9 MPa)
28 day	7,500 (51.7 MPa)	6,200 (42.7 MPa)	5,800 (40.0 MPa)

¹CRD C-227: 100-124% (plastic), 124-145% (flowable)

²CRD C-611: 10-30 sec efflux time.



How to Use

Surface Preparation	Remove all dirt, oil, grease, and other bond-inhibiting materials by mechanical means. Anchor bolts to be grouted must be de-greased with suitable solvent. Concrete must be sound and roughened to promote mechanical adhesion. Prior to pouring, surface should be brought to a saturated surface-dry condition.
Forming	For pourable grout, construct forms to retain grout without leakage. Forms should be lined or coated with bond-breaker for easy removal. Forms should be sufficiently high to accommodate head of grout. Where grout-tight form is difficult to achieve, use SikaGrout 212 in dry pack consistency.
Mixing	Mix manually or mechanically. Mechanically mix with low-speed drill (400-600 rpm) and Sika mixing paddle or in appropriately sized mortar mixer. Product Extension: For deeper applications, SikaGrout 212 (plastic and flowable consistencies only) may be extended with 25 lbs. of 3/8" pea gravel. The aggregate must be non-reactive, clean, well-graded, saturated surface dry, have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2. Add the pea gravel after the water and SikaGrout 212.
Mixing Procedure	Make sure all forming, mixing, placing, and clean-up materials are on hand. Add appropriate quantity of clean water to achieve desired flow. Add bag of powder to mixing vessel. Mix to a uniform consistency, minimum of 2 minutes. Ambient and material temperature should be as close as possible to 70°F. If higher, use cold water; if colder, use warm water.
Application	Within 15 minutes after mixing, place grout into forms in normal manner to avoid air entrapment. Vibrate, pump, or ram grout as necessary to achieve flow or compaction. SikaGrout 212 must be confined in either the horizontal or vertical direction leaving minimum exposed surface. After grout has achieved final set, remove forms, trim or shape exposed grout shoulders to designed profile. SikaGrout 212 is an excellent grout for pumping, even at high flow. For pump recommendations, contact Technical Service. Wet cure for a minimum of 3 days or apply a curing compound which complies with ASTM C-309 on exposed surfaces.
Limitations	<ul style="list-style-type: none"> ■ Minimum ambient and substrate temperature 45°F and rising at time of application. ■ Minimum application thickness: 1/2 in. ■ Maximum application thickness (neat): 2 in. Deeper applications are possible, please contact Sika's technical services department. ■ Do not use as a patching or overlay mortar or in unconfined areas. ■ Material must be placed within 15 minutes of mixing. ■ As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur Hi-Mod 32.
Caution Irritant	Suspect carcinogen - contains portland cement and crystalline silica. Skin and eye irritant. Avoid breathing dust. Use only with adequate ventilation. May cause delayed lung injury (silicosis). IARC lists crystalline silica as having sufficient evidence of carcinogenicity in laboratory animals and limited evidence of carcinogenicity in humans. NTP also lists crystalline silica as a suspect carcinogen. Use of safety goggles and chemical resistant gloves is recommended. In case of high dust concentrations or exceedance of PELs, use an appropriate NIOSH approved respirator. Remove contaminated clothing.
First Aid	In case of skin contact, wash thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes; contact physician immediately. Wash clothing before re-use.
Clean Up	In case of spillage, ventilate area of spill, confine spill, vacuum or scoop into appropriate container. Dispose of in accordance with current applicable local, state and federal regulations. Uncured material can be removed with water. Cured material can only be removed mechanically.

KEEP CONTAINER TIGHTLY CLOSED
NOT FOR INTERNAL CONSUMPTION

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor.

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Product Data Sheet
Edition 07.2007
CSC Master Format™ 03 01 30
SikaTop® 123 Plus

SikaTop® 123 Plus

Polymer-Modified, Cementitious, Non-Sag Mortar, PLUS Migrating Corrosion Inhibitor

Description SikaTop® 123 Plus is a polymer-modified, PLUS migrating corrosion inhibitor, cementitious, two-component, fast-setting mortar. Formulated for trowel application, it is designed especially for repair of overhead and vertical surfaces.

Where to Use

- Use on grade, above, and below grade on concrete and mortar.
- Structural repair material for parking structures, industrial plants, walkways, bridges, tunnels, ramps, and dams.

Advantages

- Superior abrasion resistance over conventional cement mortar.
- Bond strength ensures superior adhesion.
- Not a vapour barrier
- Compatible with coefficient of thermal expansion of concrete.
- Increased resistance to de-icing salts.
- Good freeze/thaw resistance
- High early strength
- Easy-to-use, fast-setting, labour-saving system.
- High compressive and flexural strengths.
- Not flammable
- Meets MTO MI-67 specification for patching materials.
- Meets ATU B391 specification for patching materials.
- Canadian Food Inspection Agency acceptance.
- Ministry of Transport Québec acceptance.

Technical Data

Packaging	20.5 kg (45 lb) unit
Colour	Concrete Grey when mixed
Yield	Approx. 10 L (0.353 ft ³)
Shelf Life	1 year in original, unopened packaging. Store dry at 5° - 32°C (41° - 89°F). Condition product to 15° - 24°C (59° - 75°F) before using. Protect component A from freezing. If frozen, discard.
Mixing Ratio	A:B = 1:4.8 by weight depending on consistency required
Application Time [23°C (73°F)]	Approx. 15 min after mixing the mortar
Finishing Time [23°C (73°F)]	Approx. 30-60 min after placing the mortar

Properties at 23°C (73°F) and 50% R.H.

Density ASTM C 185	2000 kg/m ³ (125 lb/ft ³)
Compressive Strength ASTM C 109	
24 hrs	20 MPa (2900 psi)
7 days	37 MPa (5366 psi)
28 days	50 MPa (7250 psi)
Modulus of Elasticity ASTM C 469	
7 days	17 GPa (2.4 x 10 ⁶ psi)
28 days	26 GPa (3.7 x 10 ⁶ psi)
Tensile Splitting Strength ASTM C 496	
21 days	5 MPa (725 psi)
Bond Strength ASTM C 882	
24 hrs	7 MPa (1015 psi)
28 days	17 MPa (2465 psi)
Bond Strength CAN A23.2-6B	
28 days	Greater than concrete
Rapid Chloride Permeability AASHTO T277	
14 days	270 Coulombs



How to Use	
Surface Preparation	Remove all deteriorated concrete, dirt, oil, grease, other bond inhibiting materials from surface. Be sure patch area is no less than 3 mm (1/8 in) minimum depth. Preparation work should be done by chipping, high-pressure waterblasting, or other appropriate mechanical means. Obtain substrate fracture with a minimum surface profile of ± 1.5 mm (1/16 in) (CSP 5-9). Dampen surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) with no standing water during application.
Mixing	Mix mechanically using a heavy duty, low-speed drill (300-450 rpm) with a mixing paddle (ex.: Mud Mixer Type). Shake component A before using, then pour approx. 4/5 component A into mixing container. Add component B while continuing to mix. Mix to a uniform consistency for a minimum of 3 min. Add additional component A to mix if a wetter consistency is required. Should you need smaller quantities, be sure that components are dosed in correct ratio and thoroughly premix component B before dosing. Ratio is A:B = 1:4.8 by weight.
Application	At time of application, surfaces should be damp (saturated surface dry) with no glistening water. Mortar must be scrubbed into substrate filling all pores and voids. Alternatively, SikaTop® Armatec 110 EpoCem® can be used as a bonding agent. Apply mortar before bond coat dries, then screed. Force product against edge of repair, working toward center. Allow mortar to reach initial set [30-60 min after placing at 23°C (73°F)], then finish with wood or sponge float for a smooth surface. For extra smooth finish, wipe steel trowel with component A during finishing. If repair requires several lifts, each lift must be applied as soon as the previous lift will support it and all surfaces but the last must be left rough. Unfinished work from previous day must be roughened and any polymer film removed to ensure bond.
Curing	As per ACI 308 recommendations for cement concrete, curing is required. To achieve performance consistent with technical data sheet results, curing must be provided by recognized curing methods, such as, mist spray of water/damp burlap, white polyethylene film or approved water-based curing compound, such as Sika's Florseal® WB. Curing must commence immediately after placing and finishing. Moist curing must be maintained for the first 24 hours. Protect freshly applied mortar from direct sunlight, wind rain and frost.
Clean Up	Remove SikaTop® 123 Plus from tools and mixing equipment with water. Cured product can only be removed mechanically.
Limitations	<ul style="list-style-type: none"> ■ Minimum application thickness: 3 mm (1/8 in). ■ Maximum lift thickness: 38 mm (1 1/2 in). Maximum total applied thickness should not exceed 76 mm (3 in) without additional reinforcing support. For additional information consult Sika Technical Service. ■ Minimum ambient and surface temperature: 7°C (44°F) and rising at time of application.
Caution	Contains cement, silica sand and a polymer which may in certain cases, cause skin irritation. Avoid breathing dust. Use only with adequate ventilation. In confined areas, use of a NIOSH/MSHA approved respirator is recommended. In case of skin contact, wash thoroughly with water. Consult product label for additional information.
First Aid	In case of skin contact, wash with soap and water. For eye contact flush immediately with plenty of water for at least 15 min. Contact a physician. For respiratory problems, transport victim to fresh air. Remove contaminated clothing and wash before re-use.

For more information, consult Sika Material Safety Data Sheet.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.



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An ISO 9001:2000 certified company
Pointe-Claire : ISO 14001:2004 certified EMS

SikaTop® 123 Plus

03 01 30 MAINTENANCE OF CONCRETE/HAND-APPLIED/FORMED

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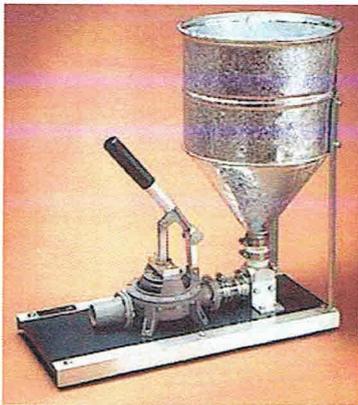
Kevin Ture

From: Kevin Ture
Sent: Saturday, July 25, 2015 12:55 PM
To: Kevin Ture
Subject: Emailing: Kenrich Products Grout Pump Model GP2 HD, Hand Operated, Single Diaphragm.htm

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Model GP-2HD

Hand Operated, Single Diaphragm, 4.6 Gallon Hopper.



MADE IN THE USA GP-2HD GP1 & GP2 Manuals **Owner's Manual PDF** 4.4MB

IDEAL FOR GROUTING METAL DOOR FRAMES

- Clevis stabilizer greatly extends diaphragm life and reduces pumping effort
- Hand operated; no electric or air power source needed
- Easy to operate, minimal maintenance required
- Pumps most types of cementitious grout (not for epoxy-type grouts)
- Makes an ideal tool for placing grout anywhere that high pressure is not required
- Lightweight and compact

Specifications Model GP-2HD:

Model	Kenrich GP-2HD
Pump Type	Single Diaphragm, Self-Priming
Power Source	Hand Operated
*Output Capacity	6 gallons/minute (48 cu. ft./hr)
Output Pressure	0 to 15 psi
Hopper Capacity	.62 cubic foot (4.6 gallons)
Placement Hose Size	1-1/2" ID by 60" long, Clear Vinyl
Discharge Head	10 foot Vertical Lift
Dimensions	23-1/2" x 12" x 23" high
Net Weight	21 pounds

*Output and performance will vary depending on cycle rate, viscosity of the grout mixture and pressure conditions.

OPTIONS:

Hose Reducer Kits	3/4" and 1" ID Available
1-1/2" ID Hose Lengths:	10 feet, 15 feet, and 20 feet
1-1/2" Hose Ends	Straight, 90 degree and 180 degree Elbows
Port Seal	Rubber, will fit 1-1/2" Hose Ends
Handle	Vertical Actuator and Handle

GP-2HD GP1 & GP2 Manuals **Owner's Manual PDF** 4.4MB



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