BUILDING TRUST

WESTEC TPER – MASTER SPECIFICATION

SUGGESTED PROPRIETARY MASTER SPECIFICATION
SECTION 03253 THERMOPLASTIC ELASTOMERIC RUBBER WATERSTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Waterstop embedded in concrete and spanning contraction, control, expansion, or construction joints to create a continuous diaphragm to prevent fluid migration.

B. Nonmetallic waterstops for use in concrete joints subjected to acids, bases, alcohols, fuels, oils, solvents or other chemicals.

1.02 REFERENCE STANDARDS FOR CHEMICAL RESISTANT WATERSTOPS

A. Chemical resistant waterstop performance is not currently governed by state or federal standard specifications. Title 40 CFR requires the use of chemical resistant waterstop in all joints for secondary containment in waste structures. Suitability of a material for a specific chemical or fuel application is best determined by application specific testing.

ASTM D 471 - Test Method for Rubber Property - Effect of Liquids
ACI 350.2R: Concrete Structures for Containment of Hazardous Materials
ACI 350R: Code Requirements for Environmental Engineering Concrete Structures and Commentary

1.03 QUALITY ASSURANCE

A. Waterstop splicing defects which are unacceptable include, but are not limited to:

1. Use of adhesives, solvents, and free lap joints.
2. Misalignment that reduces waterstop cross-section area more than 15 percent.
3. Visible porosity in the welded joint, including pinholes, charred or burnt material
4. Visible signs of splice separation when cooled splices are bent by hand at a sharp angle.
5. Edge welding.

1.04 SUBMITTALS

A. Submit manufacturer's test data for chemical resistance.

B. Submit shop drawings and fabrication drawings indicating placement of waterstop and shop fabrications.

Westec CAD shop drawings and fab drawings are a free service by Sika.

PART 2 PART

2.01 MANUFACTURER

A. Sika, St. Louis, MO, 63122; Phone (636) 225 9400 or (800-793-7832), Fax (636) 225 4849.

B. Waterstop to be WESTEC Brand TPE-R, Style ____

2.02 CHEMICAL RESISTANT WATERSTOP MATERIAL

A. WESTEC Thermoplastic Elastomeric Rubber (TPER / TPV): A fully vulcanized Synthetic rubber with high resistance to wide range of oils, solvents and chemicals.

B. Chemical Resistance testing to be performed by independent ASTM certified laboratory.

Important to the integrity of your secondary containment structure is the waterstop's performance after chemical exposure. Indicate your desired percent retention of physical properties below. Call Sika for assistance in making your selection.

PROPERTY	TEST METHOD	UNEXPOSED VALUE
Tensile Strength	ASTM D 638	2000psi
Elongation	ASTM D 638	450%
100% Modulus	ASTM D 638	1000psi
Brittle Temperature	ASTM D 746	-70F
Hardness	ASTM D 2240	85 Shore A

Waterstop material should show less than +/- 30% change in material properties, including weight gain after 7 day exposure to selected chemicals, per ASTM D471 Testing.

2.03 NONMETALLIC WATERSTOP SHOP SPLICE FABRICATIONS

A. Provide factory fabricated waterstop intersections, leaving only straight butt joint splices for the field.

B. Use Teflon covered thermostatically controlled waterstop splicing iron at 380 deg. F to 410 deg. F for TPER.

C. Waterstop intersections and directional changes to be miter cut and heat welded with centerbulb and ribs aligned to maintain continuity.

D. Splices to be free from defects as defined in "Quality Assurance" article in Part 1.

PART 3 EXECUTION

3.01 EXAMINATION

A. Ensure steel reinforcing bars do not interfere with proper position of waterstop.

B. Clean concrete joints of dirt and construction debris prior to second pour of concrete.

3.02 NONMETALLIC WATERSTOP FIELD SPLICE FABRICATION

A. Weld straight butt joint splices per requirements for shop fabricated fittings.

B. Cut waterstop ends with miter guide and circular saw to ensure good, full contact at joints.

3.03 INSTALLATION OF RIBBED TEAR WEB AND RIBBED CENTERBULB WATERSTOP

A. Use split formwork where required.

B. Center waterstop on joint.

C. Allow clearance between waterstop and reinforcing steel to prevent rock pockets and air voids caused by aggregate bridging.

D. At expansion joints, keep centerbulb positioned within the limits of the expansion joint material, to prevent centerbulb from being confined in concrete.

E. Secure waterstop in correct position using wires tied through waterstop eyelets to adjacent reinforcing steel.

3.04 INSTALLATION OF EB CAP SEAL SYSTEM

A. Stake plastic board in ground at joint location. Top of board should be set ¼" below top of slab elevation to accommodate thickness of EB-Cap Seal.

B. Drill holes at appropriate spacing to accommodate for insertion of Speed Load sleeves.

C. Insert Speed Load through expansion board.

D. Slide smooth steel load transfer dowel into Speed Load.

E. Heat weld waterstop lengths together and place on board.

3.05 INSTALLATION OF RETROFIT WATERSTOP

A. Prepare existing concrete by grinding away irregularities. Clean concrete to ensure good epoxy bond.

B. Apply continuous bed of epoxy to concrete 1/8" thick.

C. Embed retrofit waterstop in uncured epoxy.

D. Mechanically fasten waterstop to concrete using stainless steel batten bars and anchor bolts staggered 6 inches O.C. max. Use batten bars on top and bottom.

E. Tool continuous layer of epoxy over batten bars and bolts to protect from corrosion.

F. Use expansion joint filler at moving joints to minimize shear stresses. Filler material should cover batten bars and anchor bolts to allow joint movement.

3.06 CONCRETE PLACEMENT AT WATERSTOP

A. Carefully place concrete without displacing waterstop from proper position.

B. Thoroughly and systematically vibrate concrete around waterstop to obtain impervious, void-free concrete in vicinity of joint and to maximize intimate contact between concrete and waterstop.

C. After first pour, clean unembedded waterstop leg to ensure full contact of second pour concrete.

END OF SECTION

Sika Corporation - US
201 Polito Avenue
Lyndhurst, NJ 07071
United States
Usa.Sika.com

For More Information Contact
Sika - St. Louis Sales Office
3400 Tree Court Industrial Blvd.
63122, St. Louis, MO
United States
www.USA.Sika.com
Phone: 1-800-325-9504
Fax: 800-551-5145