



Submittal Review Response

Project Name: Hilo WWTP Rehabilitation and Replacement Project Phase 1
Submittal No.: 03150.-01.0
Date: 8/19/2025

Client: County of Hawai'i Carollo Project No.: 203975
Contractor: Nan, Inc.
Submittal Name: Expansion Joint
Reviewed By: Marissa Kurniawan, Felicia Fan

SUBMITTAL REVIEW

Review is for general compliance with contract documents. No responsibility is assumed by Carollo for correctness of quantities, dimensions, and details. No deviation or variation is approved unless specifically addressed in these review comments. Refer to Section 01330 for additional requirements. The Contractor shall assume full responsibility for coordination with all other trades and deviations from contract requirements.

Approved	<input checked="" type="checkbox"/>	No Exceptions
	<input type="checkbox"/>	Make Corrections Noted - See Comments
	<input type="checkbox"/>	Make Corrections Noted - Confirm
Not Approved	<input type="checkbox"/>	Correct and Resubmit
	<input type="checkbox"/>	Rejected - See Remarks
Receipt Acknowledged	<input type="checkbox"/>	Filed for Record
	<input type="checkbox"/>	With Comments - Resubmit

Review Comments:

1. No comments.

CONTRACTOR SUBMITTAL TRANSMITTAL FORM REV. A

Owner: County of Hawaii
Contractor: Nan, Inc. **Project No.:** WW-4705R
Project Name: Hilo WWTP Phase 1 **Submittal Number:**
Submittal Title: For Information Only
TO:
From: Nan Inc.

Specification No. and Subject of Submittal / Equipment Supplier	
Spec:	Paragraph:
Authored By:	Date Submitted:

Submittal Certification	
Check Either (A) or (B):	
<input type="checkbox"/> (A)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings with <u>no exceptions</u> .
<input type="checkbox"/> (B)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings <u>except</u> for the deviations listed.
Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.	
General Contractor's Reviewer's Signature:	
Printed Name and Title:	
In the event, Contractor believes the Submittal response does or will cause a change to the requirements of the Contract, Contractor shall immediately give written notice stating that Contractor considers the response to be a Change Order.	
Firm:	Signature: Date Returned:

PM/CM Office Use
Date Received GC to PM/CM:
Date Received PM/CM to Reviewer:
Date Received Reviewer to PM/CM:
Date Sent PM/CM to GC:

Nan, Inc

PROJECT: HILO WWTP REHABILITATION
AND REPLACEMENT PROJECT - PHASE 1

JOB NO. WW-4705R

THIS SUBMITTAL HAS BEEN CHECKED BY
THIS CONTRACTOR. IT IS CERTIFIED
CORRECT, COMPLETE, AND IN
COMPLIANCE WITH CONTRACT
DRAWINGS AND SPECIFICATIONS. ALL
AFFECTED CONTRACTORS AND
SUPPLIERS ARE AWARE OF, AND WILL
INTEGRATE THIS SUBMITTAL (UPON
APPROVAL) INTO THEIR OWN WORK.

DATE RECEIVED _____
 SPECIFICATION SECTION # _____
 SPECIFICATION _____
 PARAGRAPH _____
 DRAWING _____
 SUBCONTRACTOR _____
 SUPPLIER _____
 MANUFACTURER _____

CERTIFIED BY CQCM or Designee : _____

SECTION 03150
CONCRETE ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Waterstops.
 - 2. Joint fillers.

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. D570 - Standard Test Method for Water Absorption of Plastics.
 - 2. D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 3. D638 - Standard Test Method for Tensile Properties of Plastics.
 - 4. D746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
 - 5. D747 - Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam.
 - 6. D792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
 - 7. D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - 8. D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - 9. D2240 - Standard Test Method for Rubber Property - Durometer Hardness.
- B. American National Standards Institute (ANSI):
 - 1. A135.4 - Basic Hardboard.
- C. U. S. Army Corps of Engineers (USACE):
 - 1. CRD-C-572, Specification for Polyvinyl Chloride Waterstop.

1.03 SUBMITTALS

- A. Product data:
 - 1. Polyvinyl chloride waterstops: Complete physical characteristics.
 - ✓ 2. Preformed expansion joint material: Sufficient information on each type of material for review to determine conformance of material to requirements specified.
- B. Samples:
 - 1. Polyvinyl chloride waterstop.

- C. Laboratory test reports: Indicating that average properties of polyvinyl chloride waterstops material and finish conform to requirements specified in this Section.
- D. Quality control submittals:
 - 1. Certificates of Compliance:
 - a. Written certificates that polyvinyl chloride waterstops supplied on this Project meet or exceed physical property in accordance with USACE CRD-C-572 and the requirements of this Section.
 - 2. Manufacturer's instructions: For materials specified in this Section that are specified to be installed with such instructions.

1.04 QUALITY ASSURANCE

- A. Mock-ups:
 - 1. Welding demonstration:
 - a. Demonstrate ability to weld acceptable joints in polyvinyl chloride waterstops before installing waterstop in forms.
- B. Field joints:
 - 1. Polyvinyl chloride waterstops field joints: Free of misalignment, bubbles, inadequate bond, porosity, cracks, offsets, and other defects which would reduce the potential resistance of material to water pressure at any point. Replace defective joints. Remove faulty material from site and disposed of by Contractor at its own expense.
- C. Inspections:
 - 1. Quality of welded joints will be subject to acceptance of Engineer.
 - 2. Polyvinyl chloride waterstop: Following defects represent partial list that will be grounds for rejection:
 - a. Offsets at joints greater than 1/16 inch or 15 percent of the material thickness, at any point, whichever is less.
 - b. Exterior crack at joint due to incomplete bond, which is deeper than 1/16 inch or 15 percent of material thickness, at any point, whichever is less.
 - c. Any combination of offset or crack that will result in net reduction in cross section of waterstop in excess of 1/16 inch or 15 percent of material thickness, at any point, whichever is less.
 - d. Misalignment of joint that will result in misalignment of waterstop in excess of 1/2 inch in 10 feet.
 - e. Porosity in welded joint as evidenced by visual inspection.
 - f. Bubbles or inadequate bonding.

PART 2 PRODUCTS

2.01 JOINT FILLERS

- ✓A. General:
 - 1. Use specific type in applications as indicated on the Drawings.
 - 2. Do not use scrap or recycled materials to manufacture joint fillers.

B. Preformed expansion joint materials:

- ✓1. Bituminous fiber expansion joint material:
 - a. Properties:
 - 1) Thickness: To match joint width indicated on the Drawings.
 - 2) Asphalt-impregnated fiber in accordance with ASTM D1751.
 - b. Manufacturers: One of the following or equal:
 - 1) Durajoint.
 - ✓2) W.R. Meadows, SealTight Fibre Expansion Joint.
- ✓2. Synthetic sponge rubber expansion joint material:
 - a. Properties:
 - 1) Thickness: As recommended for width indicated on the Drawings.
 - 2) Material in accordance with ASTM D1752, Type I.
 - b. Manufacturers: One of the following or equal:
 - 1) Williams Products Inc., Everlastic 1300.
 - ✓2) W.R. Meadows, SealTight Sponge Rubber.

2.02 WATERSTOPS

A. Waterstops - polyvinyl chloride (PVC):

- 1. Manufactured from prime virgin polyvinyl chloride plastic compound containing the plasticizers, resins, stabilizers, and other materials necessary to meet the requirements as specified in this Section.
- 2. Manufacturers: One of the following or equal:
 - a. Vinylex Corp.
 - b. Sika Corp., Greenstreak PVC Waterstop.
- 3. Type: Ribbed waterstop:
 - a. Construction joints: 6-inch wide ribbed type.
 - b. Expansion joint for wall penetrations for concrete encased electrical duct banks: 6-inch ribbed type with hollow center bulb.
 - c. Expansion joints: 9-inch wide ribbed type with hollow center bulb.
 - d. Dumbbell-type waterstop will not be allowed unless otherwise specified or indicated on the Drawings.
 - e. Retrofit waterstop where indicated on the Drawings:
 - 1) L-shape: 3-inch by 3-inch ribbed type.
 - f. No scrap or reclaimed material shall be used.
- 4. Properties as indicated in the following table:

Physical Characteristics	Test Method	Required Results
Specific Gravity	ASTM D792	Not less than 1.3.
Hardness	ASTM D2240	70 to 90 Type A15 Shore durometer.
Tensile Strength	ASTM D638	Not less than 2,000 pounds per square inch.
Ultimate Elongation	ASTM D638	Not less than 300 percent.
Alkali Extraction	CRD-C-572	Change in weight after 7 days: Between minus 0.1 percent and plus 0.25 percent. Change in hardness after 7 days: Not more than plus 5 points.

Physical Characteristics	Test Method	Required Results
Low Temperature Brittle Point	ASTM D746	No sign of cracking or chipping at -35 degrees Fahrenheit.
Water Absorption	ASTM D570	Not more than 0.15 percent after 24 hours.
Accelerated Extraction Test	CRD-C-572	Tensile strength: Not less than 1,600 pounds per square inch. Elongation: Not less than 280 percent.
Stiffness in Flexure	ASTM D747	Not less than 600 pounds per square inch.
Tear Resistance	ASTM D624	Not less than 225 pounds per inch.
Thickness	-	3/8 inch.
Center Bulb		
6-inch Waterstops	-	7/8 inch or 1-inch nominal outside diameter.
9-inch Waterstops	-	For expansion joints 1 inch and narrower: 1-inch nominal outside diameter. For expansion joints wider than 1 inch: 2-inch nominal outside diameter.
Allowable Tolerances		
Width	-	Plus or minus 3/16 inch.
Thickness	-	Plus or minus 1/32 inch.

- B. Waterstops - hydrophilic rubber:
1. As specified in Section 03154 - Hydrophilic Rubber Waterstop.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Waterstops:
1. General:
 - a. Store waterstops so as to permit free circulation of air around waterstop material and prevent direct exposure to sunlight.
 - b. Install waterstops in concrete joints where indicated on the Drawings.
 - c. Carry waterstops in walls into lower slabs and join to waterstops in slabs with appropriate types of fittings.
 - d. In waterbearing structures: Provide all joints with waterstops, whether indicated on the Drawings or not.
 - e. Provide waterstops that are continuous.
 - f. Set waterstops accurately to position and line as indicated on the Drawings.

- g. Hold and securely fix edges in position at intervals of not more than 24 inches so that they do not move during placing of concrete.
 - h. Position the waterstop so that symmetrical halves of waterstop are equally divided between concrete pours. Center axis of waterstop shall be coincident with centerline of the joint.
 - i. Do not drive nails, screws, or other fasteners through waterstops in vicinity of construction joints.
 - j. Use wires at not more than 24 inches on centers near outer edge of waterstop to tie waterstops into position.
 - k. Special clips may be used in lieu of wires, at Contractor's option.
 - l. Terminate waterstops 3 inches from top of finish surfaces of walls and slabs unless otherwise specified or indicated on the Drawings.
 - m. When any waterstop is installed in concrete on one side of joint, while the other half or portion of the waterstop remains exposed to the atmosphere for more than 2 days, take suitable precautions to shade and protect exposed waterstop from direct rays of sunlight during entire exposure and until exposed portion is embedded in concrete.
 - n. When placing concrete at waterstops in slabs, lift edge of waterstop while placing concrete below the waterstop. Manually force waterstop against and into concrete, and then cover waterstop with fresh concrete.
2. Polyvinyl chloride waterstop:
- a. Install waterstops so that joints are watertight.
 - b. Weld joints such as unions, crosses, ells, and tees, with thermostatically controlled equipment recommended by waterstop manufacturer:
 - 1) Do not damage material by heat sealing.
 - 2) Make joints by overlapping, then simultaneously cut ends of sections to be spliced so they will form smooth even joint. Heat cut ends with splicing tool until the plastic melts. Press 2 ends together until plastic cools.
 - 3) Maintain continuity of waterstop ribs and tubular center axis.
 - 4) The splices shall have tensile strength of not less than 60 percent of unspliced materials tensile strength.
 - c. Butt joints of ends of 2 identical waterstop sections may be made while material is in forms.
 - d. Manufacturer shall factory prefabricate joints for crosses and tees.
 - e. Split-type waterstops will not be permitted except where specifically indicated on the Drawings.
 - f. Retrofit waterstop systems shall include waterstop profile, stainless steel batten bars, and stainless steel concrete anchors:
 - 1) Prepare existing concrete surface and apply epoxy as required by waterstop manufacturer.

B. Joints:

- 1. Construct construction and expansion joints as indicated on the Drawings.
- 2. Preformed expansion joint material: Fasten expansion joint strips to concrete, masonry, or forms with adhesive. No nailing will be permitted, nor shall expansion joint strips be placed without fastening.

END OF SECTION

PRODUCT DATA
(Fiber Expansion Joint)



MasterFormat: 03 15 16

JUNE 2021
(Supersedes April 2018)

FIBRE EXPANSION JOINT

Multi-Purpose, Expansion-Contraction Joint Filler

DESCRIPTION

FIBRE EXPANSION JOINT is composed of cellular fibers securely bonded together and uniformly saturated with asphalt to assure longevity. Wherever a cost-effective joint filler is required, FIBRE EXPANSION JOINT meets the need. Manufactured and marketed by W. R. MEADOWS since the early 1930s, FIBRE EXPANSION JOINT is backed by over 90 years of proven application experience. FIBRE EXPANSION JOINT is versatile, resilient, flexible, and non-extruding. When compressed to half of its original thickness, it will recover to a minimum of 70% of its original thickness. FIBRE EXPANSION JOINT will not deform, twist, or break with normal on-the-job handling. Breakage, waste, and functional failure resulting from the use of inferior, foreign fiber materials can cost you time and dollars and can result in a substandard finished job, generating costly callbacks and rework expenses. However, the purchase and installation of FIBRE EXPANSION JOINT (a small segment of the total project's cost) contributes to both the final cost efficiency and functional success, far greater in proportion than its original cost.

Representative United States patents: USPNs 7,815,722; 8,057,638; 8,038,845; and D558,305. (See also www.wrmeadows.com/patents for further patent/intellectual property information.)

USES

FIBRE EXPANSION JOINT is ideal for use on highways, streets, airport runways, sidewalks, driveways, flatwork, and scores of commercial and industrial applications subject to pedestrian and vehicular traffic.

FEATURES/BENEFITS

- Provides the ideal product for the majority of all expansion/contraction joint requirements.
- Non-extruding ... versatile ... offers a minimum 70% recovery after compression.
- This tough, lightweight, easy-to-use, semi-rigid joint filler is available in strips and shapes fabricated to your requirements.
- Easy to cut ... dimensionally stable ... not sticky in summer or brittle in winter.
- Provides neat, finished joints requiring no trimming.
- Often copied ... but never equaled.
- Remains the standard of the industry today ... with over 90 years of proven and satisfactory performance.
- Can be punched for dowel bars and laminated to thicknesses greater than 1" (25.4 mm).



SPECIFICATIONS AND SIZE INFORMATION

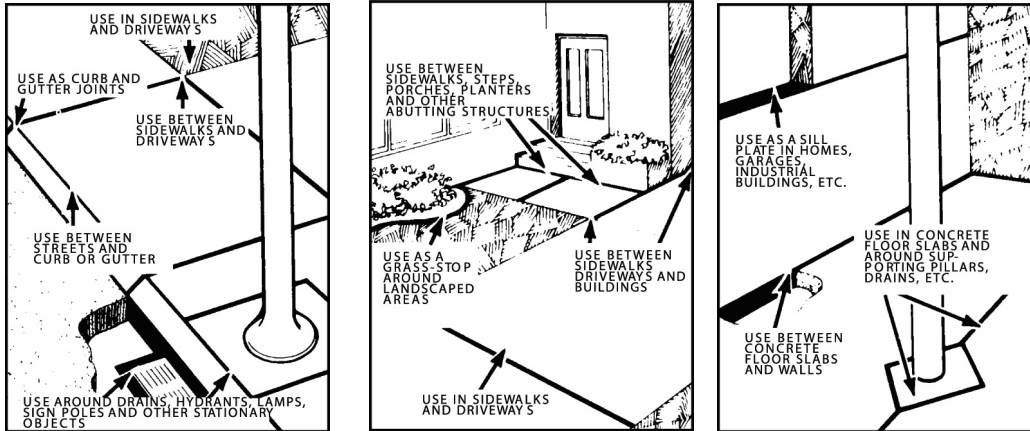
Conforms to or meets:	Thickness	Slab Widths	Standard Lengths	Weight per ft. ³
<ul style="list-style-type: none"> ▪ AASHTO M 213 ▪ ASTM D1751 ▪ Corps of Engineers CRD-C 508 ▪ FAA Specification Item P-610-2.7 ▪ HH-F-341 F, Type 1 	3/8", 1/2" 3/4", 1" (9.5, 12.7, 19.1, 25.4 mm)	36", 48" (.91, 1.22 m)	10' (3.05 m) Also available: 5', 6', 12' (1.5, 1.83, 3.66 m)	>19 lb.

CONTINUED ON REVERSE SIDE ...

W. R. MEADOWS, INC.

P.O. Box 338 • HAMPSHIRE, IL 60140-0338
 Phone: 847/214-2100 • Fax: 847/683-4544
 1-800-342-5976
www.wrmeadows.com • info@wrmeadows.com

HAMPSHIRE, IL / CARTERSVILLE, GA / YORK, PA
 FORT WORTH, TX / BENICIA, CA / POMONA, CA
 GOODYEAR, AZ / MILTON, ON / SHERWOOD PARK, AB



APPLICATION

FIBRE EXPANSION JOINT is positioned against the forms, at interrupting objects or columns, and against abutting structures prior to the placement of concrete. FIBRE EXPANSION JOINT should be installed 1/2" (12.7 mm) below the concrete surface to accept a joint sealant which will provide for maximum protection from water infiltration and weathering, in addition to keeping the joint free from incompressibles. SNAP-CAP® from W. R. MEADOWS is recommended to create the reservoir for the joint sealant and the use of POURTHANE® SL, POURTHANE NS, or DECK-O-SEAL® as the sealant to protect the joint. Before sealing, slide SNAP-CAP over the top of the expansion joint. Place the concrete and screed to finish grade, as usual. When concrete is cured, insert a screwdriver through the top of SNAP-CAP, pull free and discard. In applications where one of the above-mentioned joint sealants is used without SNAP-CAP, W. R. MEADOWS recommends the use of KOOL-ROD™ or a bond-breaker tape to isolate FIBRE EXPANSION JOINT from the joint sealant material. SOF-SEAL® or any hot-applied sealant, such as HI-SPEC®, can be used to protect the joint. In this case, the use of SNAP-CAP, KOOL-ROD, or a bond-breaker tape is not necessary. Simply apply the sealant directly over FIBRE EXPANSION JOINT.

For most current data sheet, LEED information, and SDS, visit www.wrmeadows.com.



LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

Disclaimer

The information contained herein is included for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. W. R. MEADOWS, INC. cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As W. R. MEADOWS, INC. has no control

over the use to which others may put its product, it is recommended that the products be tested to determine if suitable for specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine the suitability of products for specific application and assume all responsibilities in connection therewith.

PRODUCT DATA
(Sponge Rubber Expansion Joint)



Master Format: 03 15 00

JUNE 2025
(Supersedes October 2022)

SPONGE RUBBER EXPANSION JOINT

Expansion/Contraction Control Joint

DESCRIPTION

SPONGE RUBBER EXPANSION JOINT is produced to a uniform thickness and density from gray-colored, top-quality, blown sponge rubber. It is easily compressed and has a recovery of 95% or more of the original thickness and a density of not less than 30 lb./ft.³ (480.56 kg/m³).

USES

SPONGE RUBBER EXPANSION JOINT is frequently used on bridge structures and sewage treatment plants that undergo rapid changes in temperature. Because of its excellent recovery capability during wide temperature variations, SPONGE RUBBER EXPANSION JOINT is used around supporting pillars, drains, hydrants, and lamp and sign posts, as well as in isolation applications or between materials having dissimilar coefficients of expansion.

FEATURES/BENEFITS

- High resiliency with excellent recovery after compression.
- Protects against water infiltration when properly sealed.
- Easy to handle and install.
- Offers isolation capabilities.

PACKAGING

Thickness Widths	Slab Widths	Standard Lengths
1/4" (6.35 mm)	36"	10' (3.05 m)
3/8" (9.53 mm)	(914.4 mm)	
1/2" (12.7 mm)		
3/4" (19.05 mm)		
1" (25.4 mm)		

SPECIFICATIONS/STANDARDS

- AASHTO M 153, Type 1
- ASTM D1752, Type 1
- Corps of Engineers CRD-C 509, Type I
- FAA Specification Item P-610-2.7
- Federal Specification HH-F-341 F, Type II, Class A

TECHNICAL DATA

PROPERTY	TYPICAL TEST RESULTS	TEST METHOD
Standard Color:	Gray	
Density:	30 lb./ft. ³ (480 kg/m ³)	ASTM D545
Compression Force Deflection 50% Compression:	50 psi (0.3 MPa)	ASTM D545
Recovery, Thickness Recovered, Compressed 50% at RT for 10 min:	90%	ASTM D545
Extrusion, Compressed 50% with 3 edges restrained:	0.250" (6.4 mm)	ASTM D545
Temperature Range:	-20° F to 160° F (-84° C to 71° C)	

CONTINUED ON REVERSE SIDE ...

W. R. MEADOWS, INC.

P.O. Box 338 • Hampshire, IL 60140-0338
Phone: 847/214-2100 • Fax: 847/683-4544
1-800-342-5976
www.wrmeadows.com • info@wrmeadows.com

HAMPSHIRE, IL / CARTERSVILLE, GA / YORK, PA
FORT WORTH, TX / BENICIA, CA / POMONA, CA
GOODYEAR, AZ / MILTON, ON / SHERWOOD PARK, AB

APPLICATION

The type of control joint and spacing used will vary with each project according to the type of structure, climatic conditions, and anticipated stresses in the concrete. Thinner joints of 1/4" (6.35 mm), 3/8" (9.53 mm), or 1/2" (12.7 mm), spaced at frequent intervals, offer greater control than thicker joints spaced at greater intervals. The basic objective is to provide ample room for the concrete to expand or contract without creating damaging stresses. Expansion joints should be positioned against forms at interrupting objects or columns and against abutting structures prior to the placement of the concrete. SPONGE RUBBER EXPANSION JOINT should be recessed 1/2" (12.7 mm) below the concrete surface to accept the joint sealant. To isolate filler from sealant, use SNAP-CAP® from W. R. MEADOWS.

DECK-O-SEAL®, POURTHANE™ NS, POURTHANE SL, and SOF-SEAL® are suitable sealants for horizontal applications of SPONGE RUBBER EXPANSION JOINT. The recommended sealants for vertical applications are DECK-O-SEAL GUN GRADE and POURTHANE NS.

For most current data sheet, LEED information, and SDS, visit www.wrmeadows.com.



LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

Disclaimer

The information contained herein is included for illustrative purposes only, and to the best of our knowledge, is accurate and reliable. W. R. MEADOWS, INC. cannot however under any circumstances make any guarantee of results or assume any obligation or liability in connection with the use of this information. As W. R. MEADOWS, INC. has no control over the use to which others may put its product, it is recommended that the products be tested to determine if suitable for specific application and/or our information is valid in a particular circumstance. Responsibility remains with the architect or engineer, contractor and owner for the design, application and proper installation of each product. Specifier and user shall determine the suitability of products for specific application and assume all responsibilities in connection therewith.