

# **ICC-ES Evaluation Report**



# **ESR-3356**

Effective Date: February 2024

This listing is subject to re-examination in one year.

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DIVISION: 06 00 00 - WOOD, PLASTICS, and

**COMPOSITES** 

Section: 06 52 00 - Plastic Structural Assemblies

**DIVISION: 22 00 00 - PLUMBING** 

Section: 22 30 00 - Plumbing Equipment

#### **REPORT HOLDER:**

EcoRain® Tank Systems of America, Inc.\* <a href="https://www.ecoraintank.com">www.ecoraintank.com</a>

\* EcoRain® Tank Systems of America, Inc. is not affiliated with EcoRain America LLC. This report does not cover EcoRain America LLC models.

#### **EVALUATION SUBJECT:**

# MODULAR UNDERGROUND STORMWATER POLYPROPYLENE TANKS

#### 1. EVALUATION SCOPE

#### Compliance with the following codes:

- 2024, 2021, 2018, 2015, 2012, 2009 and 2006 International Building Code<sup>®</sup> (IBC)
- 2024, 2021, 2018, 2015, 2012 and 2009 International Plumbing Code<sup>®</sup> (IPC)
- 2021, 2018, 2015, 2012 and 2009 International Residential Code<sup>®</sup> (IRC)
- 2024, 2021, 2018, 2015, 2012 and 2009 Uniform Plumbing Code<sup>®</sup> (UPC)\*

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## Compliance with the following standards:

- Section 1610 of the IBC
- IAPMO PS 63-2019 Plastic Leaching Chambers
- ASTM D4101-2017e1 Standard Specification for Polypropylene Injection and Extrusion Materials
- AASHTO H-25 Highway Load American Association of State Highway and Transportation Officials

#### 2. INSTALLATION

EcoRain® Tank Systems of America, Inc. skeletons are installed underground. The EcoRain® skeletons are assembled on site, placed in the excavated earth and covered with a geotextile / liner (provided by others) prior to backfilling. Base of excavation must be smooth, level soil

free of lumps or debris. The units must be installed in accordance with the manufacturer's installation instructions and the applicable codes.

#### 3. MODELS

EcoRain<sup>®</sup> Tank Systems of America, Inc. produces underground tanks skeletons for temporary storage of storm water. The tank skeletons are made of Polypropylene conforming with ASTM D4101. Models are noted in Table 1.

### 4. CONDITIONS OF USE

- 4.1. EcoRain® Tank Systems of America's Underground Stormwater Polypropylene Tanks must be installed underground and subject to a maximum load of H-25 by AASHTO. H-25 represents the earth load from a 25 ton semi-truck determined by AASHTO calculations.
- **4.2.** Product can be installed to the maximum depth of 24 feet when stacked vertically, from the bottom of the lowest unit to the surface. There is no limitation or constraints for width or length installation of the Tanks.
- **4.3.** Polypropylene Group 03, Class 3, Grade 0 and shall be in conformance with ASTM D4101.
- **4.4.** Storm water piping must conform to the applicable plumbing code.
- **4.5.** EcoRain<sup>®</sup> Tank Systems of America's Underground Stormwater Polypropylene Tanks must have a minimum 24 inch burial depth, road base per civil Engineer to resist H-25 loads.
- 4.6. EcoRain<sup>®</sup> Tank Systems of America's Underground Stormwater Polypropylene Tanks are manufactured in Mexico under a quality control program with yearly inspections by ICC-ES.

## 5.0 IDENTIFICATION

- 5.1 The product and/or packaging must bear the manufacturer's name or trademark, and Unit load rating (H-25). The ICC-ES PMG certification mark shall be placed on the product
- 5.2 The report holder's contact information is the following:

EcoRain® Tank Systems of America, Inc. 12400 Ventura Blvd. #167 Studio City, CA 91604



 Table 1

 EcoRain Tank Systems of America, Inc. Model Dimensions (feet)

Model	Front		Side		Тор	
	Н	W	Н	L	W	L
ET-1500 EcoRain Half Tank	0.79	1.34	0.79	2.23	1.34	2.23
ET-1501 EcoRain Single Tank	1.48	1.34	1.48	2.23	1.34	2.23
ET-1501.5 EcoRain Single + Half Tank	2.19	1.34	2.19	2.23	1.34	2.23
ET-1502 EcoRain Double Tank	2.89	1.34	2.89	2.23	1.34	2.23
ET-1502.5 EcoRain Double + Half Tank	3.60	1.34	3.60	2.23	1.34	2.23
ET-1503 EcoRain Triple Tank	4.30	1.34	4.30	2.23	1.34	2.23
ET-1503.5 EcoRain Triple + Half Tank	5.01	1.34	5.01	2.23	1.34	2.23
ET-1504 EcoRain Quad Tank	5.71	1.34	5.71	2.23	1.34	2.23
ET-1504.5 EcoRain Quad + Half Tank	6.42	1.34	6.42	2.23	1.34	2.23
ET-1505 EcoRain Pent Tank	7.12	1.34	7.12	2.23	1.34	2.23

# ECORAIN TANK INSTALLATION CHECKLIST

\*\*\*PLEASE READ ECORAIN TANK SYSTEMS SUBMITTAL BEFORE START OF INSTALLATION\*\*\*
SCOPE OF WORK/INSTALLATION CHECK LIST

PROJECT NAME:	Inspecto
GROUND PREPARATION	1
1. Excavate trench larger than EcoRain Tank structure, level the ground & clean the area	
2. Compact the area beneath the Tank to engineered percentage, screed the surface	
3. Remove all stones, lumps, debris, and sharp objects from sub-base	
4. Place 2" clean sand on sub-base and level with screed	
INDIVIDUAL TANK ASSEMBLY	
5. Follow assembly instructions for specified size of Tank. Contact Manufacturer for vehicular traffic assembly specifications.	
6. Insert & space pins of Small & Large Plates evenly	
7. Check to see that all Plates are connected securely and fully; multiples connected to each other; tap with dead weight	
hammer using a 2x2 piece of timber to protect the plates from the hammer blow	
8. Do not use any broken Plates	
INSTALLATION	
9. Liner (if used) to be laid per manufacturer's instructions with underlayment if specified by designer	
10. Lay Geotextile fabric with enough fabric to fully cover Tanks with 6" overlap of seams	
11. Lay out first row of individual Tanks of the application area with Large Plates facing outside to the width required, so that the	
perimeter of the structure has the Tank Large Plates facing the excavation walls *Exception w/Clean Out Portal/Plates & Odd Sizes	
12. Position subsequent rows of individual Tanks perpendicular to the first row so that only the Large Plate sides of the Tanks face	
the outside perimeter *Except when using Clean Out Portal/Plates or odd sizes – place a layer of EcoRain 1" or Ecovoid 2" Cells	
against the Tank Small Plate sides. Contact Manufacturer for Tank positions in vehicular traffic conditions and large structures	
13. Make sure there are no gaps between installed Tanks - abut to one another as tightly as possible and/or use pins	
14. Position last row the same as the first row, with Large Plates facing the excavation wall, *See above Exceptions	
15. For EcoRain structures over 4.3' tall, follow installation pattern as shown in EcoRain ET-1212B drawing or shop drawing	
16. If any, as with Clean Out Portal/Plates, reinforce exposed Small Plates using a layer of Ecovoid HD 2" Cells	
17. Wrap Geotextile fabric around the Tanks & secure with HDPE tape	
18. Minimum 6-inch (150 mm) overlap of Geotextile fabric	
<ol> <li>Secure Geotextile fabric overlapped joints to prevent sand/fill from entering Tank during backfill operation</li> </ol>	
20. Tops of individual Tanks must be level with no uneven plates, Tanks do not "rock"	
INLET/OUTLET PIPE CONNECTION – (Connect Pipes, if any, before Backfilling)	
Pipes smaller than 6 inches (150mm) diameter	
21. Insert pipe into the Tank by cutting a hole no larger than 6" in the Large Plate between two of the Small Plates	
22. Cut and secure Geotextile fabric around the inserted pipe with boot, ties, and tape to prevent sand/fill from entering Tank	
Pipes larger than 6 inches (150mm) diameter	
23. Do NOT cut hole or insert pipe over 6 inches in diameter into the Tank	
24. Place & secure one layer of Ecovoid HD 2" Cells to Tank at pipe entry/exit point	
25. In a second layer of Ecovoid HD 2" Cells, cut a hole the diameter of the pipe at entry/exit point height	
26. Place & secure the cut second layer of Ecovoid HD 2" Cells against the first layer - insert pipe, abutting the side of Tanks	
27. Cut & secure Geotextile fabric to the pipe with boot, ties, and HDPE tape to prevent sand/fill from entering Tank	

BACKFILL - (After Pipe Connections)	
28. 8-inch (200 mm) maximum height of backfill drop from tractor scoop	
29. Drop specified backfill material around the perimeter of the Tank in 8 - 12 inch (300-400 mm) depths	
30. Compact backfill per plan using compaction plate on opposite sides of the tank at the same time	
31. Place plywood sheet upright between Tank & backfill to protect Tank side, Geotextile & liner (if used) from compaction plate	
32. Compact in 8 – 12 inch (300-400 mm) lifts to top of Tank	
33. Compact sand/fill on top of Tank with low pressure tire or track vehicle, vibratory plate compactor, or low psi compactor per	
plan no more than 6,000 lbs.	
34. Mark perimeter of Tank with caution/barricade tape to keep out heavy equipment	
35. Install all remaining backfill as described above or as specified by Engineer/Landscape Architect	
36. In traffic load installations, use EcoRain 1" or Ecovoid HD 2" Cell layer per Manufacturer or Biaxial Geogrid placed per Geogrid	
Manufacturer's recommendation	
NOTE: Secure the area of application with barriers/ropes during the entire scope of work. Prohibit all vehicu	lar traffic
EcoRain Tank Systems of America DOES NOT accept liability for incorrect installation	n