



# R-TANK® HS20 LOAD RATING

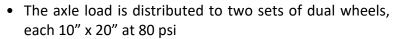
The R-Tank system is capable of easily supporting AASHTO HS20 and HS25 loads with safety factors of 1.75 or higher. The system has been used in a variety of applications around the world with tremendous success.

## **Bearing Capacity**

The R-Tank's ultimate design load comes from the results of a compression test performed according to ASTM D 2412 & ASTM F 2418, which are the industry standard tests for loading of underground detention systems. TRI Environmental completed testing, and their report along with a technical note about the test methodology is available to supplement this document.



The AASHTO HS20 Standard uses a 32,000 lbs. axle as the design load (two axles at 25,000 lbs. each at depths greater than 38"). To conservatively model the R-Tank's performance under these types of traffic loads numerous factors are considered:



- The tire contact area is transferred down through the cover layers at a conservative 1:2 angle (33%) to the top of the R-Tank
- An impact factor is added to account for the movement of the load
- Weight of cover material in a saturated condition is added (130 lbs./cf)



R-Tank<sup>HD</sup> Located Under Truck Parking Area



**Unconfined Compression Test** 

With these factors in place, the HS-20 load can be modeled and the resulting safety factor determined. The table on page 2 shows how the R-Tank performs at various depths of cover, and it suggests which module should be used. Since most projects are designed for HS-20 loads in parking lots, this table is ideal for most installations.

If you are designing for HS-25 loads, tables for these specific circumstances are available.

### **Third Party Verification**

Modeling product performance using engineering equations to ensure a successful project is important. But what really matters is product performance in the field. That is why we've done real-world testing with third party agencies who have installed the R-Tank and subjected it to brutal testing.

One test involved installing 18" of sand cover over an R-Tank<sup>LD</sup> module (an R-Tank<sup>SD</sup> should have been used at this depth) without geogrid and driving a 31-ton dump truck over the system. Even in these harsh conditions, the R-Tank has supported the loads, passing every field test that has been done.

R-Tank<sup>LD</sup> Field Testing

#### **Real World Performance**

Your project REQUIRES a proven system. With thousands of installations around the world, R-Tank has proven itself again and again as one of the strongest systems available for underground detention/retention. Specify R-Tank and you can be confident your system will support the traffic loads above.

Call Ferguson today to discuss your project's requirements.



Truck (31 Tons) Backing Over R-Tank<sup>LD</sup>

- R-Tank HD
- R-Tank SD
- R-Tank UD R-Tank XD
- \* LRFD Tandem Loading controls at depths of 38" or more.
- \*\* Includes Dynamic Loading Allowance in Accordance with AASHTO LRFD.
- \*\*\* In leiu of Live and Dead Load factors, a minimum "Safety Factor" of 1.75 is maintained.