

Composite Manhole Cover The New Standard

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Composite Manhole Covers

Presentation Purpose

STOP Sanitary Sewer Overflows, lock out massive amounts of I&I, and reduces the owners costs associated with the current cast-iron un-sealed manhole covers. **Bring the sewer collection system up to current TCEQ and EPA standards effectively!**



Key Issues with Current Standard Cast-Iron Manhole Covers

- **UNSEALED/LEAKS**
- **CORROSION PRONE**
- **SEIZE PRONE**
- **DANGEROUS TO
HANDLE**
- **NOT SECURE**
- **OUTDATED DESIGN**
- **HIGH COST OF
OWNERSHIP**

ASCE Wastewater Report Card



New Manhole Cover Compliance Design Standards

Chapter 217.55 Subchapter C

Manhole Covers

- (A) A manhole where personnel entry is anticipated requires a clear opening with at least a *30 inch diameter*.
- (B) A manhole located within a 100-year flood plain must be *gasketed and bolted down to prevent inflow*.
- (C) A manhole cover must be constructed of impervious material with *no holes* that could *allow inflow*.
- (D) A manhole cover that is located in a roadway must meet or exceed the American Association of State Highways and Transportation Officials standard *M-306 for load bearing*

EPA *clean air and water acts*. EPA requires the sewer and toxic sewer gases contained inside the sewer system not in our living environment.

SSO's Major Health Hazard Nation Wide

Sanitary **sewer overflow (SSO)** is a condition in which **untreated sewage** is discharged from a sanitary sewer into the environment prior to reaching **sewage** treatment facilities.



Failing Design From Outdated Product



Effects of Corrosion and Importance of Material Selection



Importance of Corrosion Resistant Materials

- Corrosion resistant design should be inert to H₂S sewer gas to prevent ring seizing to the cover
- This prevents access and is very time consuming and costly to M&O



No Scrap Value

- This new technology reduces the risk of theft because the design has no scrap metal value.
- **Anti-theft** and secured to the ring.
- **Theft isn't the real issue** it's the aftermath of the missing cover: pedestrian safety, cars, and massive amounts of I&I pouring into opening.



I&I and SSO Killer

- Dramatic I&I reduction from as high as **122gpm** to as low as **0pgm** from entering through manhole cover (**Reduces I&I**)
- TCEQ “means of preventing inflow” in 100 yr. flood plain
- **SAVING millions** of gallons from entering the system per event.



I&I Economics 101

40-70 GPM Leaking reported by SAWS EPA bench flow tests on cast iron vented manholes.

1440 Minutes in 24hr. Rain event period can produce up to **57,600** per single manhole!

Current Costs of Current Covers

- ✓ Electrical Pumping Costs
- ✓ Vac Pumping Costs
- ✓ EPA/TCEQ Fines
- ✓ Chemical Costs at Plants
- ✓ Private Damage Costs



Lighter weight/less injury/ Easier to Handle and Transport

- The lighter weight will keep operators from having **unnecessary workman's comp claims and injuries**
- OSHA lower back injury weight is set at **50lbs**
- **Faster to install with less manpower** and you can take more product with a less or capacity vehicle/trailer
- **180° double hinged guide for easy/safer opening**



Environmental Impact

When the **sewage overflows** it goes into yards and runs off into the storm sewer system which is carried off in to **creeks, rivers, and lakes** which is apart of our surface drinking water.



Finally a Solution is Here

HD Composite Manhole Covers



An Engineered Solution For Today and Tomorrow



Non-Corrosive



UV-Stable



DOT Approved



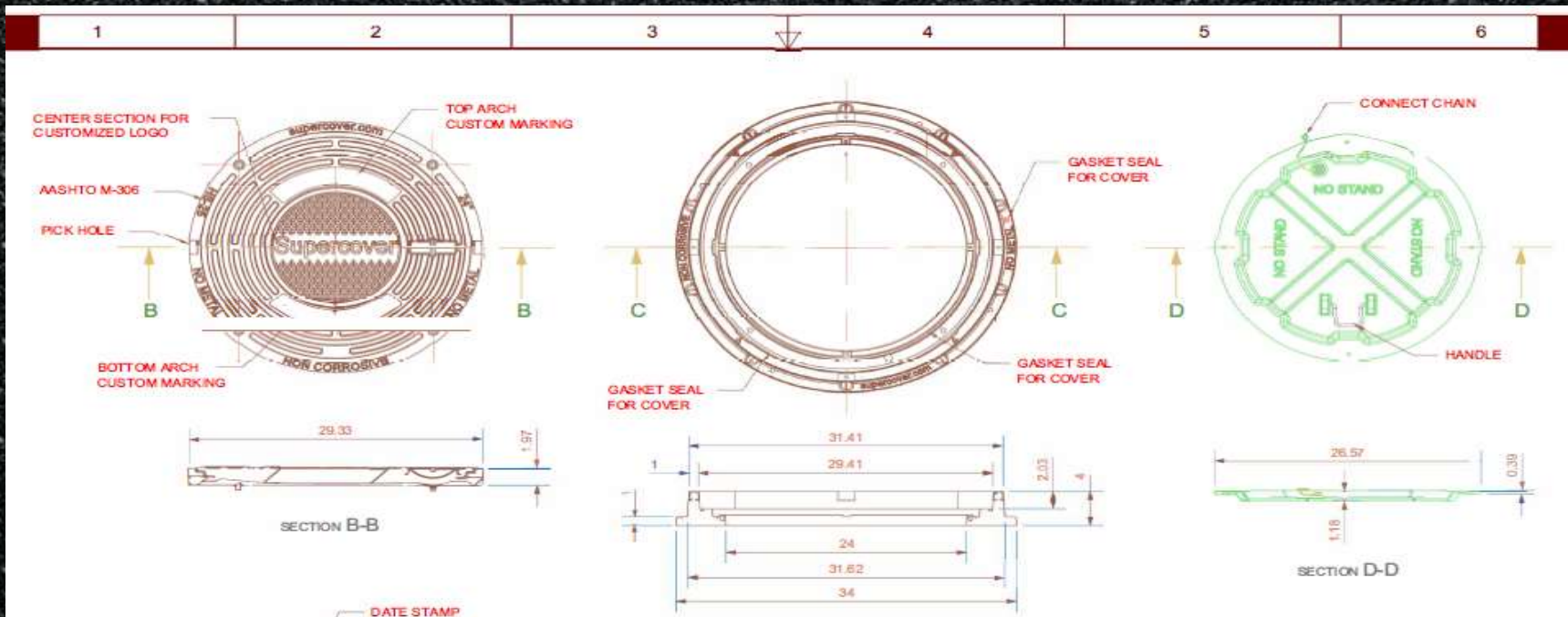
Water-Tight



Safer



Odor-Eliminating



HD Composite Manhole Ring and Covers

Hinged and Bolted



3rd Party Tested by Trenchless Technology Center



DOT Approved Street Ready!

- ✓ Exceeds the HS-25 traffic loading **AASHTO M-306**
- ✓ DOT Approved



Sewper Cover™ Test Results:

Table 2: Breaking Strength of the Tested Manhole Covers

Manhole Cover	Peak Load, lbs	% of Proof Load	Displacement Right Before Break		Maximum Displacement	
			mm	in	mm	in
1	140009	350	29.13	1.15	31.25	1.23
2	138013	345	28.64	1.13	29.88	1.18
3	112643	281	23.18	0.91	28.79	1.13

Load Vs. Displacement

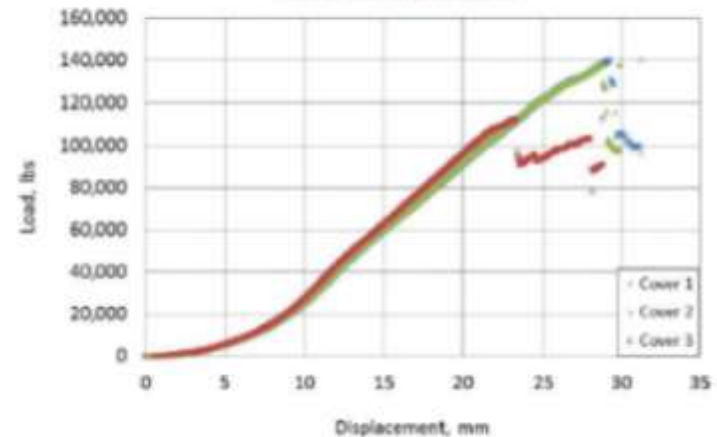


Figure 10: Load Vs. Displacement Curve for All the Specimens

The **Sewper Cover™** was able to average **130,000lbs total force weight before failure**. That's 90,000lbs over the requirement for Heavy Duty/ HS-20 rating.
***Full test reports available upon request**

System Ready

5 years of successful inground
U.S. installs



Thanks For Your Time and Allowing Us to Present Today!



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