



# SAINT-GOBAIN SEALS APPLICATION CASE STUDY



## Space: Case of the Large Diameter Fuel Tank Seal

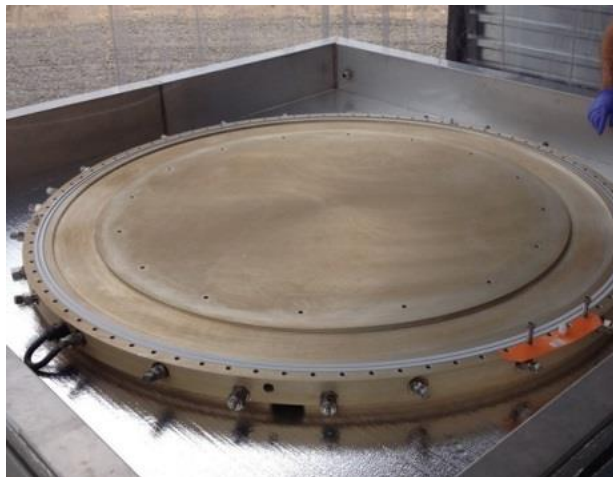
### CUSTOMER CRITICAL DIFFERENCE

A rocket needs significant amount of fuels in the engine to enable the rocket to fly until its final destination. To house these fuels, big tanks are used which require seals that are equally large in size - typically between 1 and 2 meters or even larger. Sealing is critical especially when liquid oxygen or hydrogen are involved since they are easily ignitable. Any small amount of leakage can create a hazardous situation, which can lead to a potential explosion of the whole launch system.

Our **OmniSeal® RACO®** spring-energized seal is a proven solution for this challenging application. It has been qualified in many NASA space programs for the past 60 years, meeting the precise leakage requirement of this tank application in the range of 0.01 sccs. Big seal, big benefit!

### CONNECTED APPLICATION

**OmniSeal® RACO® Seal:** Used in the feedlines from the fuel tank to the rocket engine and oil & gas FPSO turret swivels.



**Solution Team: Garden Grove, CA USA Site**

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Critical parts  
making THE difference



SEALS

SAINT-GOBAIN



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### PRODUCT SOLUTION

**OmniSeal® RACO**

### AREA

Main/Upper Stage LOX/LH2 Tank Sump

### MATERIAL

Fluoroloy® A20

### CRITICAL PART

Custom Spring-Energized Manhole Cover Face Seal

### TECHNICAL DETAILS

- Media: Liquid Oxygen
- Temperature: -423°F to 100°F (-253C to 38C)
- Motion: static
- Pressure: few hundred psi (15-20 BAR)
- Counter face: 2195 Aluminium Alloy



### BENEFITS AND ADDED VALUE

- Available in large size
- High spring force grants excellent leakage performance even at cryogenic temperatures
- Excellent seal surface finish for cryogenic sealing
- Product cleanliness in oxygen service per IEST-STDCC1246

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