

CNG TRAILER - 10' SMARTSTORE™ TRAILERS TECHNICAL DESCRIPTION

Each 10ft module will be composed of 20 equally sized HEXAGON LINCOLN type 4 cylinders with 450 L water volume each, contained by and neck mounted to a metal frame with 10 ft. length, fully piped, equipped with safety equipment and protected by metal covers. The proposed CNG transport modules with composite type IV cylinders provide the following unique advantages in terms of life cycle and operation cost:

- a) Designed lifetime of 20 years even with operation in adverse climatic conditions due to corrosion free composite cylinder design.
- b) Fit for transportation of corrosive methane gas contents (e.g. sulfuric or wet) over lifetime due to non-metallic liner containing the gas.
- c) Light weight cylinder concept compares to steel @ 30 % of comparable storage weight
- d) Minimizes stresses and wear of container structure.
- e) Reduces maintenance of transport vehicle (e.g. brakes)
- f) Maximum safety
- g) Performing maximum burst pressure in the industry
- h) Protected against fire with advanced thermal pressure relief concept
- i) Inhibiting cylinder damage due to patented "TUFFSHELL" design

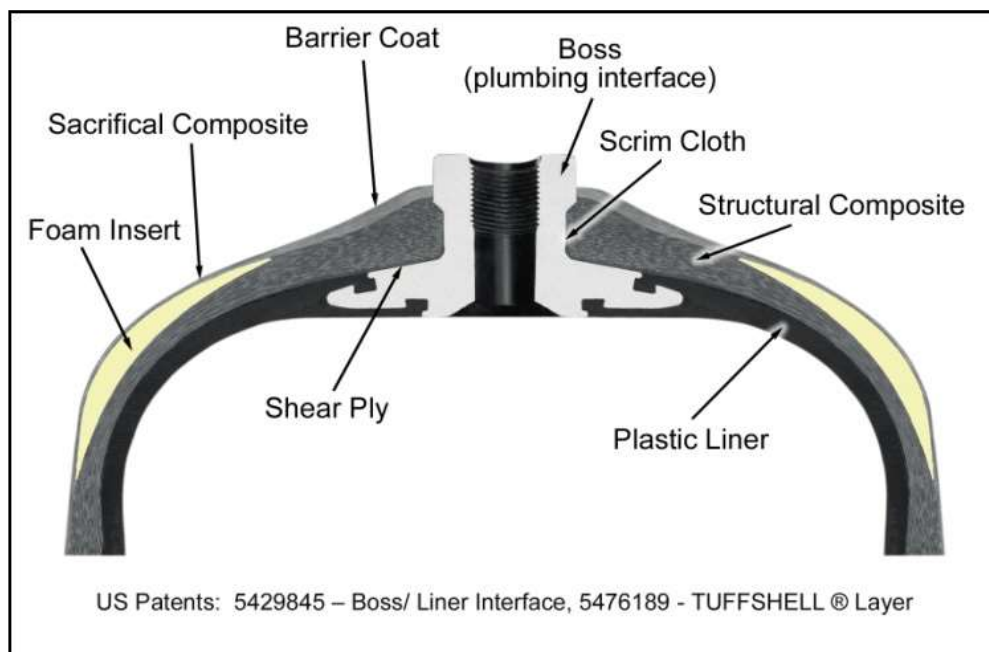
TECHNICAL DESCRIPTION

CYLINDER

Each cylinder is composed of a HDPE liner and carbon/glass hybrid fibre wrapping. This cylinder concept has since 1993 a proven track record as a very reliable design with

more than 250,000 type 4 cylinders in daily use on different vehicles and stationary use with CNG and hydrogen globally. The distinctive advantages are:

- 1) tightness due to the patented boss liner interface
- 2) TUFFSHELL design providing maximum protection
- 3) no fatigue issues
- 4) best possible surface damage protection by TUFFSHELL shoulder protection and sacrificial glass layer to protect surface of cylinders



Cylinders are homologated according to ISO 11439.

STORAGE MODULE FRAME

The module frame will follow the construction guidelines of a 10 ft ISO (high cube special design) container structure. The module frame receives standard container twist locks, facilitating the mounting / dismounting of the module from the trailer. The cylinders will be horizontally fixed to a galvanized steel frame and mounted by our patented neck mounting system, allowing for:

- Safe fixation in view of regulations and related G-loads.
- Compensation of length expansion of the cylinders.
- The piped side is fixed in position avoiding movement during the expansion of the cylinder.

Frame material: Steel, painted with two layers of epoxy paint.

Covers: Corrugated container walls.

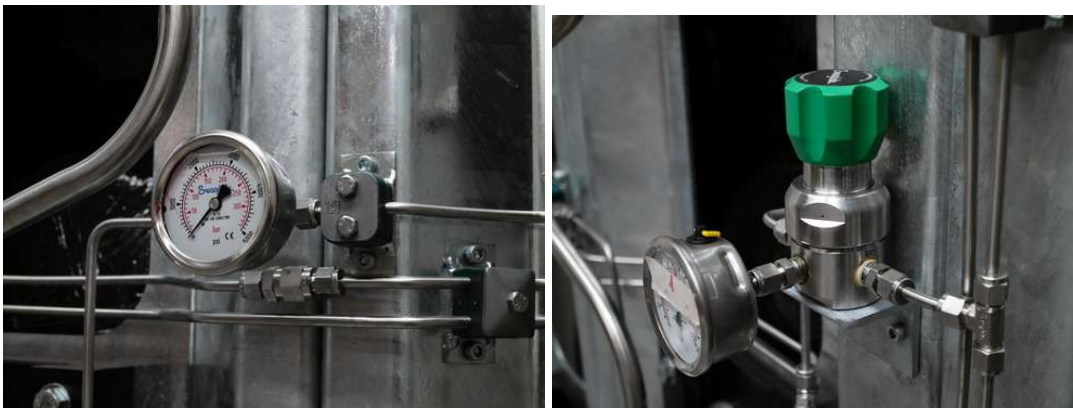


For geometrical dimensions and weight of module see Enclosure 1.

PIPING AND COMPONENTS

The piping system will be piped with pipes and connectors suitable and approved for natural gas up to 300 bar allowing for fast fill and easy drain. The following functional elements will be provided:

- Main piping exclusively in SS 316 (no mild steel) in accordance to ASTM 316 or equivalent.
- (1) Filling / decanting panel on one side of the module with (2) SNAPTITE quick connectors per module.
- Welded connections for main pipe, all connectors with double ferrule design.
- (4) Manometers (one for each main bank).
- (1) Thermometer (inserted to one cylinder)
- (4) Pressure relief valves (one for each main bank)
- Sufficient high flow temperature triggered pressure relief devices providing sufficient flow to vent the module in case of fire.
- Manual valves made by SWAGELOK, each one for a bank of ten cylinders.



ENCLOSURE 1

Total water volume [l] @ ambient pressure	9,000 L
Number of cylinders	20
Volume per cylinder [l] water capacity	450
Service pressure [bar]	250
Hydrostatic test pressure [bar]	375
Burst pressure [[bar] min.	560
[following ISO 11439]	
Maximum fill pressure [bar]	300
dimension of storage module	
* width [mm]	2,450
* length [mm]	3,029
* height [mm]	2,900

Inclusive of:

- 1) Skeletal Semi Trailer
- 2) Ad Valorem Registration Fee (AVRF) (for Malaysia only)
- 3) Preparation of documents and drawings for authority submission (for Malaysia only)