

MEGCs for transportation of Hydrogen

LOWEST COST TYPE IV IN THE MARKET



Virtual pipeline
Maximise payload.
Minimise total cost
of ownership.

Full composite cylinders



High gas-to-weight ratio



Superior safety levels



Extended service lifetime

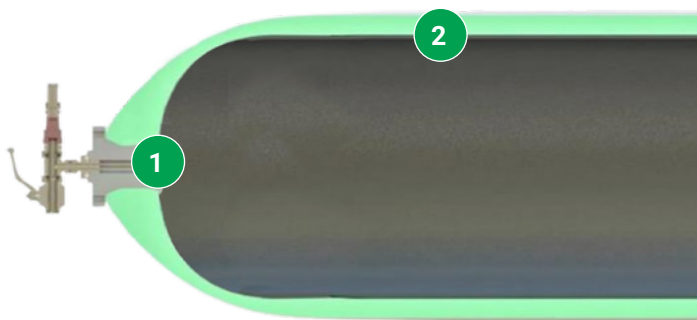


UMOE Advanced Composites (UAC) is the leading global supplier of large glass fibre Type IV cylinders and MEGCs for storage and transportation of hydrogen, biogas and CNG for land-based, marine and offshore applications.

Type IV glass fibre composite cylinder technology

CYLINDER DESIGN

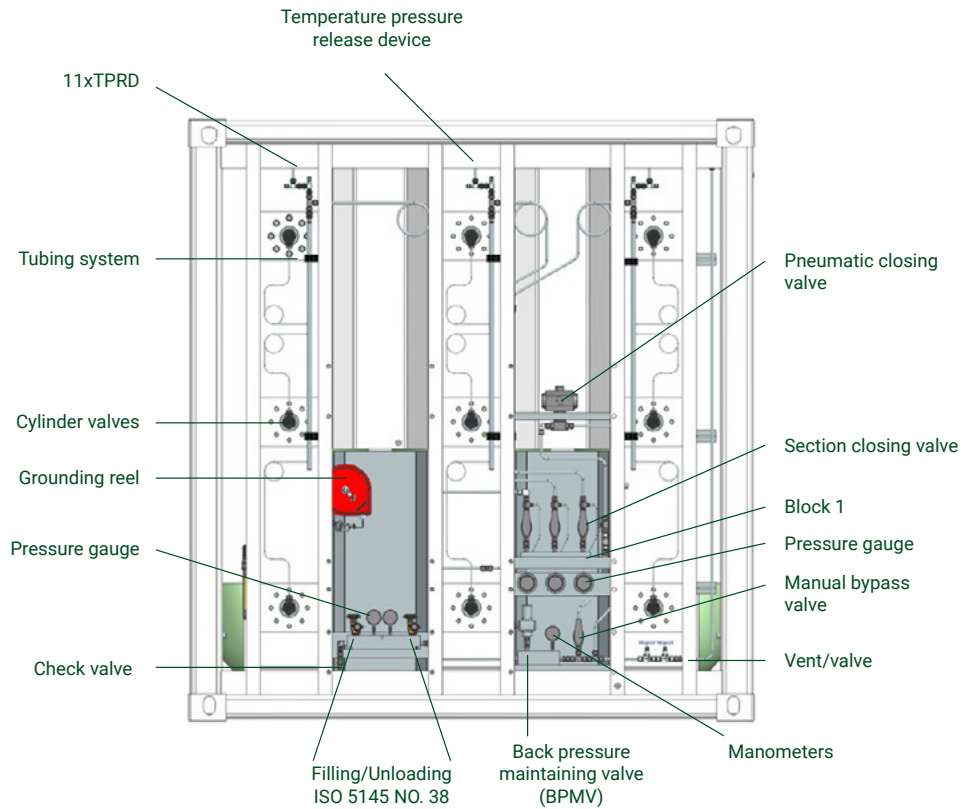
- 1** **Stainless steel leak-proof end bosses, embedded for maximum strength**
 - Optional customization of manifold configurations
 - “Leak-before-burst” safety philosophy, ensuring controlled failure and enhanced operational safety
- 2** **High-density polyethylene (HDPE) inner liner, fully protected and heavily reinforced**
 - High-strength glass fibre overwrap
 - Epoxy resin matrix for structural integrity



CYLINDER BENEFITS

- 01. Impact resistance comparable to steel** delivering high safety margins with significantly lower weight
- 02. Best in class fire performance** exceeding stringent international safety standards
- 03. Reliable and low maintenance** with zero corrosion, embrittlement, and exceptional reliability even in extreme climates
- 04. Cost-effective glass fibre construction** offering a lower-cost alternative to Type IV carbon fibre cylinders
- 05. Lower carbon footprint** than steel or carbon fibre alternatives





GENERAL SPECIFICATIONS

	ISO Standard or High Cube	Hook load SS3021 or SFS4417
Container/MEGC Type	Steel container with composites doors with corner casting position as per ISO 668. Corrosion protection: Level C4 as per ISO 12944-2. Colour: White RAL 9003	Galvanized steel frame with aluminum box
Pressure vessel size	1,666L (20', 40), 1,925L (45')	1,666L
Piping material	Stainless steel	Stainless steel
Manifold connections	Customized configurations	Customized configurations
Operational temperature range	-40°C / +65°C	-40°C / +65°C
Type approval certification - Pressure vessel	EN 12245-3	EN 12245-3
Type approval certification - MEGC	EN 13807 - ADR / TPED / RID / RHO / IMDG	ADR / TPED

OPTIONAL FEATURES FOR ISO STANDARD OR HIGH CUBE

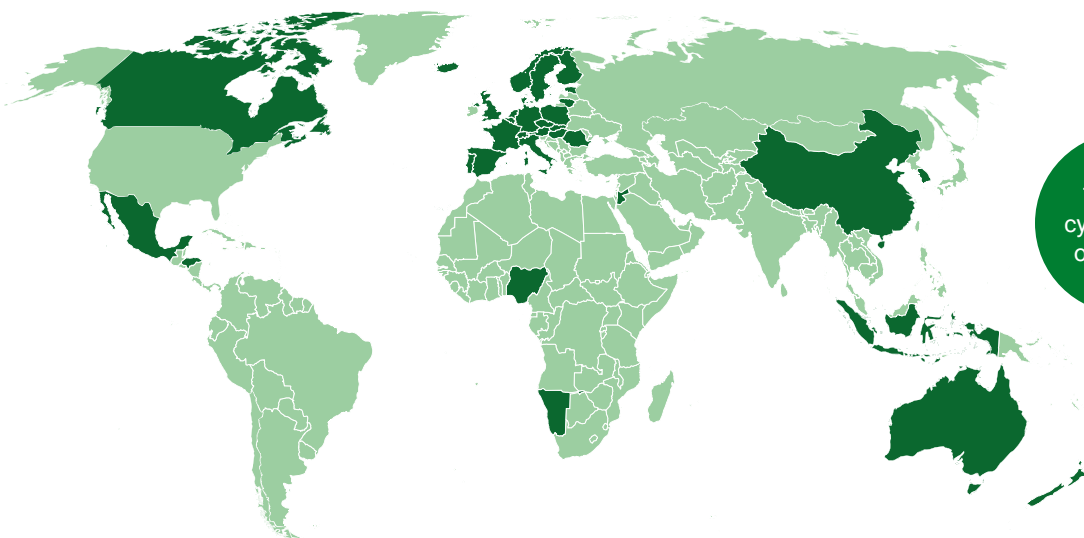
Pneumatically actuated main / sections valves (closed when depressurized)	For externally controlled fill/discharge
Manual shut down buttons front and rear side	Manually shut down pneumatic valves when filling/discharging
Residual pressure valve	To protect Type IV pressure vessels against low pressure
Additional filling and/or discharge couplings	Could also be quick connectors
Pressure sensor and transmitter	For external control of pressure
Temperature sensor and transmitter	For external control of temperature
Immobilizer / Anti-Tow away	Activation of trailers parking brake when charging / discharging
Corrosion protection	Level C5 as per ISO 12944-2
MEGC painted in customized RAL code	Dark colours not recommended
Logo or customized text foiled on container walls	For customer logo/name and slogans

UAC'S MEGC PORTFOLIO OVERVIEW

Container Size	UNIT	20' Hook Load	20' ISO STD	20' ISO HC	40' ISO STD	40' ISO HC	45' ISO HC
Number of cylinders	#	9	9	11	18	22	22
Cylinder volume	l	1,666	1,666	1,666	1,666	1,666	1,925
Total storage volume (wc)	l	15,000	15,000	18,333	30,000	36,666	42,350
Storage capacity (Wp 300 bar)	kg	317	317	388	634	775	896
Total weight of MEGC incl H2 @ 300 bar	kg	13,900	14,100	17,100	28,000	33,900	39,000
Storage capacity (Wp 350 bar)	kg	360	360	440	720	880	1,016
Total weight of MEGC incl H2 @ 350 bar	kg	14,100	14,300	17,500	28,000	34,400	39,600
Storage capacity (Wp 450 bar)	kg	n.a.	n.a.	438	n.a.	n.a.	n.a.
Total weight of MEGC incl H2 @ 450 bar	kg	n.a.	n.a.	21,500	n.a.	n.a.	n.a.
Height	mm	2,739	2,590	2,894	2,590	2,894	2,894



DELIVERING TO CUSTOMERS IN 40+ COUNTRIES



- 20 years' experience of glass fibre Type IV vessels
- 12,000+ cylinders in operation
- 650+ MEGCs in operation

CONTACT DETAILS



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