



ASIA LPG SUMMIT

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Under the aegis of



सत्यमेव जयते

Ministry of Petroleum & Natural Gas
Government of India



Futuristic Innovations A new paradigm in LPG Sales - Explosion proof, Light Weight Cylinders

Presentation by :-



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Current LPG Marketing Scenario



- Public sector oil companies (HPCL, BPCL, and IOCL) are marketing LPG in steel cylinders.
- LPG for Domestic Use is marketed in ‘**Signal Red**’ coloured Cylinders.
- LPG for Commercial use is marketed in ‘**Oxford Blue**’ colour cylinders.
- LPG steel cylinders are manufactured and tested as per IS 3196.



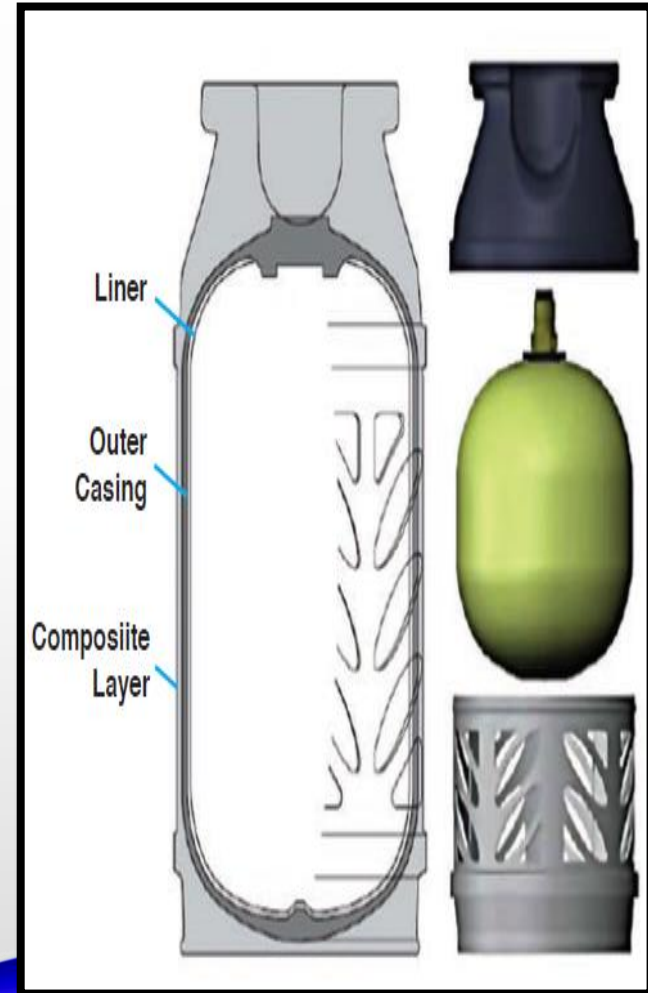
Composite Cylinders

Layer 1: The blow molded liner (HDPE) is the seamless inner gas tight layer.

The boss is made of injection molded HDPE with a steel insert.

Layer 2: The composite load carrying material is filament wound fiberglass and epoxy resin which has a tremendous capacity to withstand pressure.

Layer 3: The distinctively designed, injection molded outer casing protects the pressure vessel and valve & makes it convenient for handling.



Worldwide composite cyls used in households , auto-LPG, marine applications & medical requirements.



ADVANTAGES OVER STEEL CYLINDERS



Advantages over Steel Cylinders



v/s



Steel cylinders

- Heavy
- Difficult to handle.

Composite cylinders

- Light weight,
- Easy to handle.

Advantages over Steel Cylinders



v/s



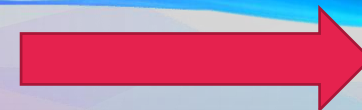
100% Safe

Steel cylinders

- Prone to Explosion

Composite cylinders

- Explosion Proof .



Advantages over Steel Cylinders



Steel cylinders –

Nation's loss due to scrap/corroded metal cylinders.

Composite cylinders –

- Non Corrosive- both inside & outside.
- No stain/mark on Floor

Advantages over Steel Cylinders



v/s



Steel cylinders –

Opaque - Gas level not visible.

Composite cylinders –

Translucent - Gas level visible.



Advantages over Steel Cylinders



v/s



**Steel cylinders –
Aesthetically - non
appealing.**

**Composite cylinders –
Aesthetically appealing –
different designs, vibrant
colors.**



Journey towards Launch



Market Launch

Statutory Approvals

Bottling facilities

Manufacturing & Testing

Standards



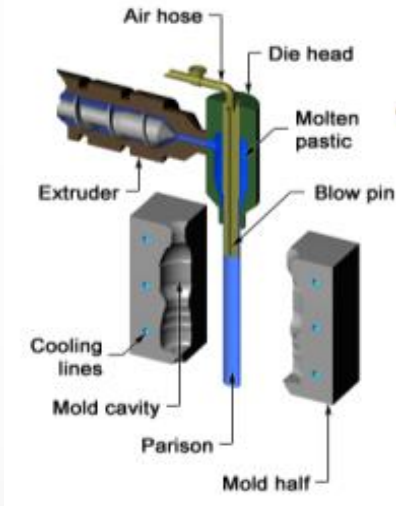
Design, Manufacturing & Testing



Designed, mfd. and tested as per:

1. International Standard: ISO 11119 – Part 3
2. European Standard: EN 12245/ EN 14427
3. Indian Standard: Draft standard under wide circulation.

Manufacturing Process



Blow Molding



Boss Welding



Filament Winding



Outer Casing Fitment

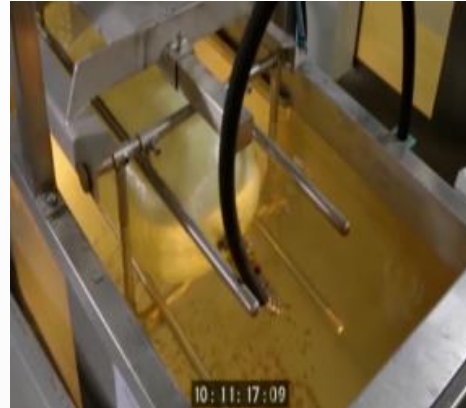


Composite Cylinder

Testing Process



Hydro Test



Leak Test



Torque Test



Ambient Cycle Test



Burst Test



FACILITIES UPGRADATION /
INFRASTRUCTURE MODIFICATION

at

LPG Bottling Plants

Purging of
Composite
cylinders



PRE- FILLING WATER SPRINKLER:

Composite cylinders likely to generate and store static electricity.



FILLING :

Semi-automatic electronic filling scale with auto cut off facility is used for filling the composite cylinder.



Q & Q CHECKS :

- CVT to check Valve Leak & "O" Ring Leak .
- Electronic Check Scale for weight checking of filled cylinders.
- Metal Boss / Body leak tested in TB.



VALVE CHANGING:

- ❑ Valve changing done by using a special spanner & torque wrench arrangement.



Handling of Composite Cylinders

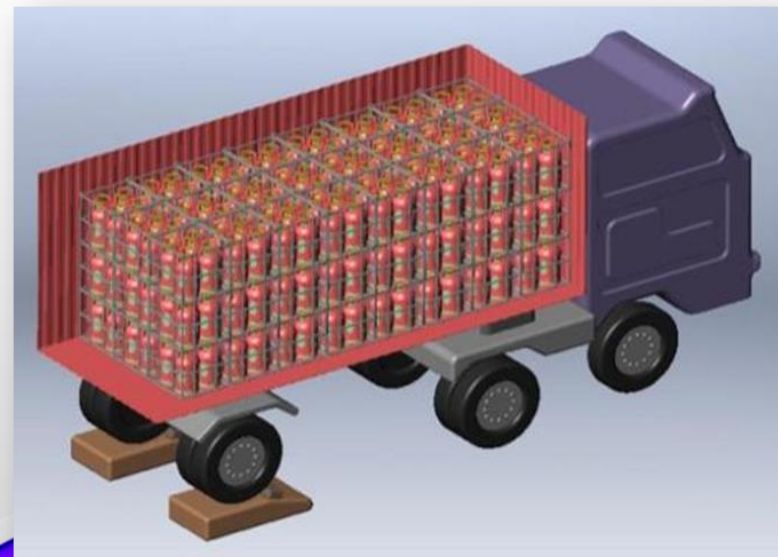
- ❑ For convenient and safe handling of composite cylinders, especially designed delivery cages will be used.
- ❑ Delivery cages will prevent scratching, scraping, rolling, dropping, dragging, knocking, throwing, etc. of composite cylinders, during any stage of handling.



Transportation of Composite Cyls.



- ❑ Cylinders will be transported along with their delivery cages through packed trucks/ pick-up vans, in vertically upright & capped position only. Cylinders should be handled either by forklift or trolleys.
- ❑ These composite cylinders will be stored in the existing licensed LPG go downs, by stacking them separately from steel cylinders.





Statutory Approvals



- In-principle go-ahead from MOP&NG.
- In-principle approval from PESO, Nagpur.
- Procurement by HPCL, on behalf of PSU oil industry.
- Filling permission from PESO, Nagpur.
- Formulation of BIS Standards



Way Forward



- Pilot being conducted at Ahmedabad, Pune & Mumbai
- SKUs being introduced : 2kg, 5kg, 7kg, 10kg & 15kg
- Further course of action to be decided basis the feedback/experience and further details on following points:
 - i. Bottling experience and scalability options.
 - ii. Market evaluation, basis acceptability by the consumers.



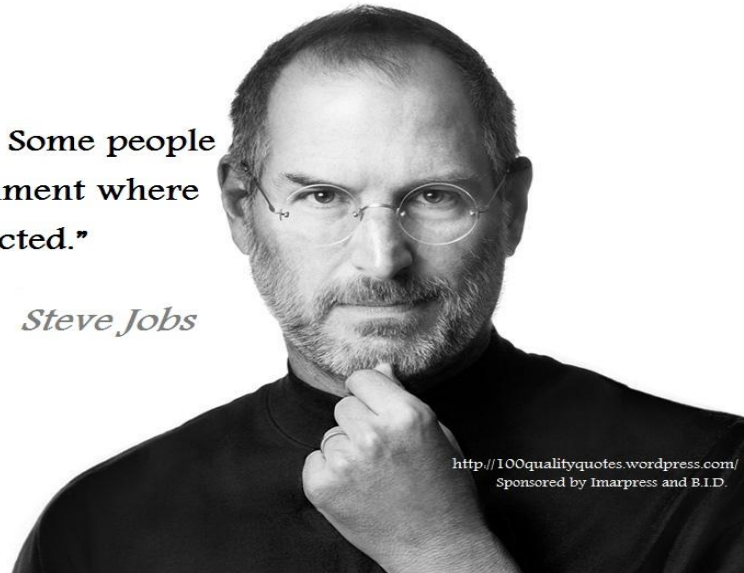


THANK YOU

Have a nice evening 😊

“Be a yardstick of quality. Some people aren't used to an environment where excellence is expected.”

Steve Jobs



<http://100qualityquotes.wordpress.com/>
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