

# **PROVIDING TRANSPORT** SOLUTIONS FOR PERISHABLE GOODS **SINCE 1967**



### Lamberet France

- A European leader covering the whole range, from small commercial vehicles to semi-trailers
- Winner of the Technical Innovation Prize at Solutrans 2011
- Integrated R&D department, with tailor made solutions for all professions





## Quality assurance

- Production site is certified ISO9001/2000
- All the production is ATP compatible (Agreement on the Transportation of Perishable goods)
- Lamberet Asia puts strong emphasis on quality and customer service





## Lamberet Asia

- Established as a direct French investment in Asia 10 years ago
- Wholly owned subsidiaries, with two manufacturing facilities, in Vietnam and Thailand
- Already exported to 12 countries
- Now considering expansion to 2 new destinations

## **Lamberet Thailand**







## Truck bodies

- All sizes, from 3 to 9 meters
- Full GRP body with PU-foam insulation
- Light weight and strong structure
- 4 wall thicknesses: 39, 57, 85, 105 mm
- Barn doors or shutter doors, side doors
- 4 different types of floors
- Warranty 2 years









## Some Lamberet Fleets







## Trailers and semi-trailers

- Complete range of full and semi-trailers
- Specs can be suited to customer needs
- Body length 6.5 to 13.6 meters
- Hi-tensile steel structure
- Light weight
- Suspension: leaf springs or air suspension
- Brakes: Optional EBS, EBD
- Tyres: radial or bias







## FreeGo: a new concept

- Best looking pick-up in the market
- International brand name
- Aluminum rear frame
- Best surface for communication
- Easiest opening and closing
- Integrated air flow
- Low weight and high performance













## FreeGo: the reference

 Already the preferred pick-up reefer body Chosen by the best logistic companies and the most demanding customers.



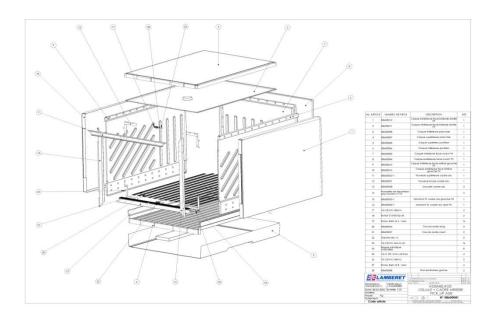


## What makes a good reefer truck?

# There are 2 main factors:

- Insulation capacity of core material
- Construction of the body







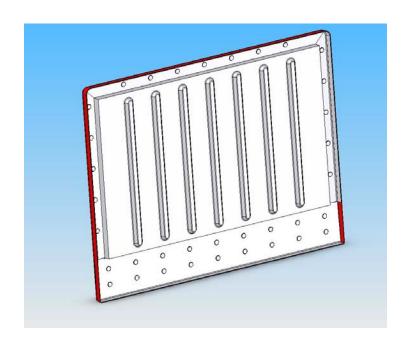
## Insulation capacity

| R-values per 25 mm given in SI              | Average (range) M | aterial m²-K/(W-in) |
|---|-------------------|---------------------|
| Vacuum insulated panel                      |                   | 7.04 (5.28–8.8)     |
| Silica aerogel                              |                   | 1.76                |
| Polyurethane rigid panel (HCFC expanded) ii | nitial            | 1.32 (1.23 - 1.41)  |
| Polyurethane rigid panel (HCFC) aged 5-10   | years             | 1.10                |
| Polyurethane rigid panel (pentane expanded) | initial           | 1.20                |
| Polyurethane rigid panel (pentane) aged 5-1 | 0 years           | 0.97                |
| Polyisocyanurate spray foam                 |                   | 1.11 (0.76 - 1.46)  |
| Closed-cell polyurethane spray foam         |                   | 1.05 (0.97 - 1.15)  |
| Urea-formaldehyde panels                    |                   | 0.97 (0.88 – 1.06)  |
| Extruded expanded polystyrene (XPS) high-o  | density           | 0.91 (0.88 – 0.95)  |
| Polystyrene board                           |                   | 0.88                |
| Extruded expanded polystyrene (XPS) low-de  | ensity            | 0.72 (0.63 – 0.82)  |
| Molded expanded polystyrene (EPS) high-de   | nsity             | 0.7                 |
| Molded expanded polystyrene (EPS) low-der   | nsity             | 0.65                |



## Body construction rules

- No thermal bridges, no metal in the box structure
- Constant insulation thickness
- Complex assembly nodes and joining surfaces between panels
- 5 lips seals on doors

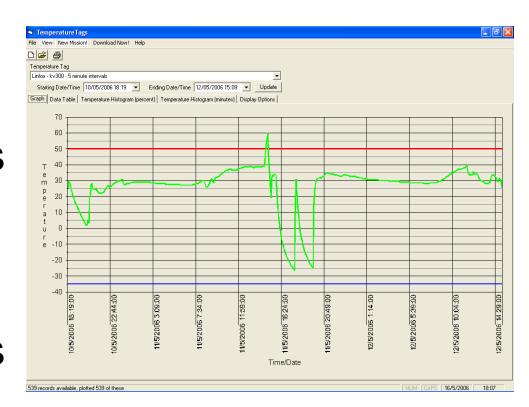




## How to measure performance

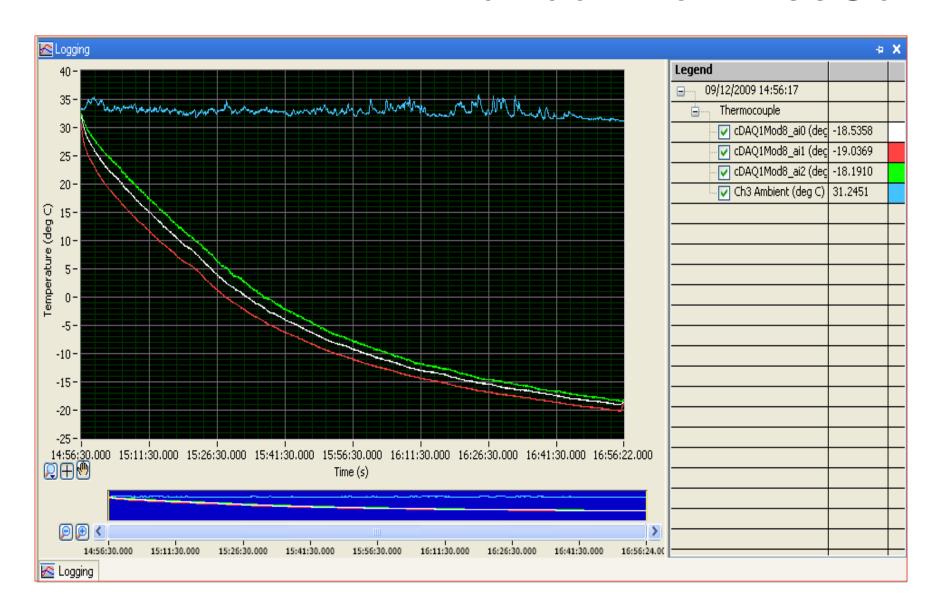
There are 2 main ways:

- See how fast temperature goes down when the unit is on
- See how slow temperature goes up when the unit is off





### Pull-down on FreeGo





### Conservation of cold

### Experiment done by Dutchmill:

- 3 trucks, same size, empty
- Pull down to 2°C by ambient temperature 41 °C
- Check how long it takes to go up to 15°C





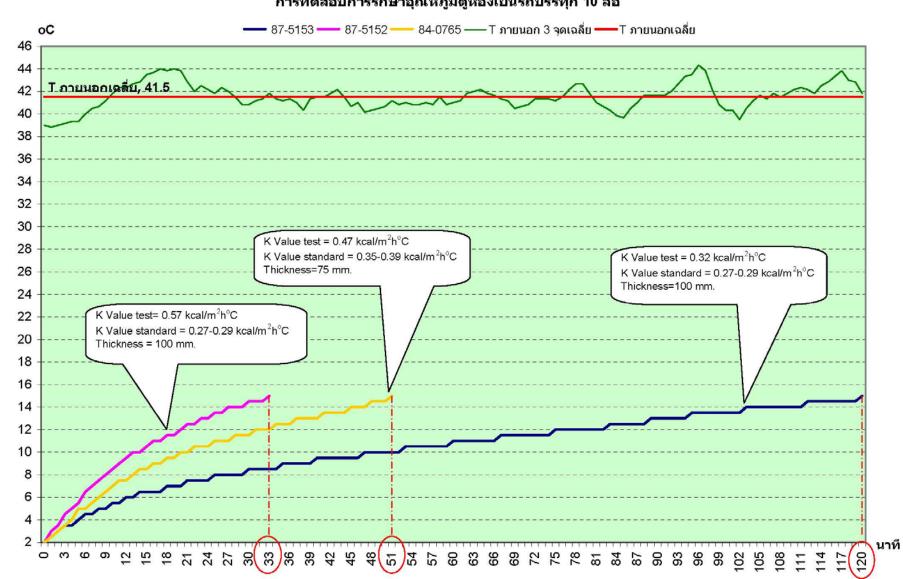
### Results

- Lamberet, 100 mm, 2 years old: 120 minutes
  Calculation of K factor: 0.32 (below 0.4)
- Other brand, 100 mm, 2 years old: 33 minutes
  Calculation of K factor: 0.57
- Other brand, 75 mm, 14 years old: 51 minutes
  Calculation of K factor: 0.47

This indicates poor construction on truck number 2, even if foam is thicker than an older truck from the same brand.



#### การทดสอบการรักษาอุณหภูมิตู้ห้องเย็นรถบรรทุก 10 ล้อ



# Thank you

