

inBulk

TECHNOLOGIES

CASE STUDY

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| Material | Oilwell Cement (Grade G) |
| Location | St John's Newfoundland, Canada |
| Application | Marine/Road Transport and Storage |
| Bulk Density | 1400kg/m ³ |
| Flow | Lafarge NA - Schlumberger |
| Date | May 2006 |
| Unit | 20' H Type |

In May 2006, **inBulk Technologies** demonstrated the advantages of intermodal bulk handling, with an opportunity to ship a load of Lafarge's G Grade Oil-well cement to oil well services customers in Newfoundland, Canada.

The ISO-Veyor used was the standard 20 H Type in carbon steel with a working volume of 25m³, maximum gross of 34,000 kg and a Tare of 4,125 kg. The H Type is also available in 30' or 40' dimensions, giving improved payloads for less dense materials.

Short sea shipping The ISO-Veyor was shipped by the company Oceanex to Halifax via the port of Montreal on one of Oceanex's twice weekly shipments. Two days later the ISO-Veyor arrived in St John's and offloaded to a twin axle skeletal trailer, before being road hauled to Lafarge's Brookfield cement manufacturing facility, located 45 minutes away.

On loading the ISO-Veyor at Brookfield, a tare scale of the empty unit provided a maximum load of 29 tonnes, so an initial 26 tonne was loaded.

Load Inspection The rear axle of the trailer was 1000 kg over highway limits. Visual inspection of the aerated material found the surface within 25 cm of the top of the ISO-Veyor. A triple axle trailer and continued loading would have resulted in a final load of 28 to 30 tonnes. Petroleum Transport provided a tractor with 15 psi compressor/blower and a standard tri-axle skeletal trailer with 2.5 metres spread from Oceanex.

Delivery Delivery to Donovan Industrial park takes 15 minutes from the Port. Schlumberger's Bulk plant supervisor completed a safety review, before discharge.



Discharge Following connection of the hoses to the blower and the discharge line to the silo, the discharge sequence began. Offload/discharge time took forty-five minutes. Due to the reduced capacity of the blower (15 psi or 1 barg), the discharge sequence took longer than normal. (with a higher capacity blower of 30 psi or 2 barg, discharge should take no longer than 30 minutes.)

Visual Inspection On inspection of the inside of the ISO-Veyor, it was observed that approximately one tonne of material remained towards the rear of the tank. The hatch was secured once more and the ISO-Veyor was pressured-up another time. The residual material was quickly blown off.

Experienced operators and a 2 barg blower offloads 30 tonnes of material in 25 minutes and residual material is measured at less than 20 kg.

The oil-well cement project, illustrates several key benefits to the industry:

- Fully intermodal – Capable of any combination of road, rail or ship
- Easy to Fill – Can be filled in same way as road or rail tankers
- Easy to Handle – Standard ISO frame allows for standard container lifting equipment
- Easy Horizontal Discharge – Simple connection to 2 barg compressor provides discharge rate of 1 tonne per minute
- Provides flexible weatherproof storage and reduces dependency on silos
- Creates platform for driver controlled deliveries
- Eliminates multiple handling of materials

Overall ISO-Veyors minimise product handling, eliminates contamination, maintains product quality and also protects environment from accidental material spillages. Taking these factors together, ISO-Veyors can significantly reduce the requirements for intermediate handling, reducing the requirements for silo construction and dramatically enhances the overall efficiency of the supply chain.



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