

# A very challenging task

by **Cardox International & ICR Research**

**W**hen the Tsunami wave hit the Indonesian city of Banda Aceh, the height of the wave was recorded at over 30m (100ft) and reportedly killed over 300,000 people in the Aceh region... as can be imagined there was very little left standing!

At the PT Semen Andalas cement plant, owned by the Lafarge group, and located some 10km from Banda Aceh, at Lhok Nga, the vessel *MV SINAR ANDALAS* had almost loaded its cargo of cement, at the adjacent cement loading terminal, with about 4800t of cement just loaded in the two main cargo holds.

Little warning was given of the approaching wave, however some of the crew were able to scramble up the neighbouring hill side to reach higher ground, while others clung to trees in a vain attempt to avoid the incoming waves.

Once the seas had finally subsided, seven crew were reported missing,

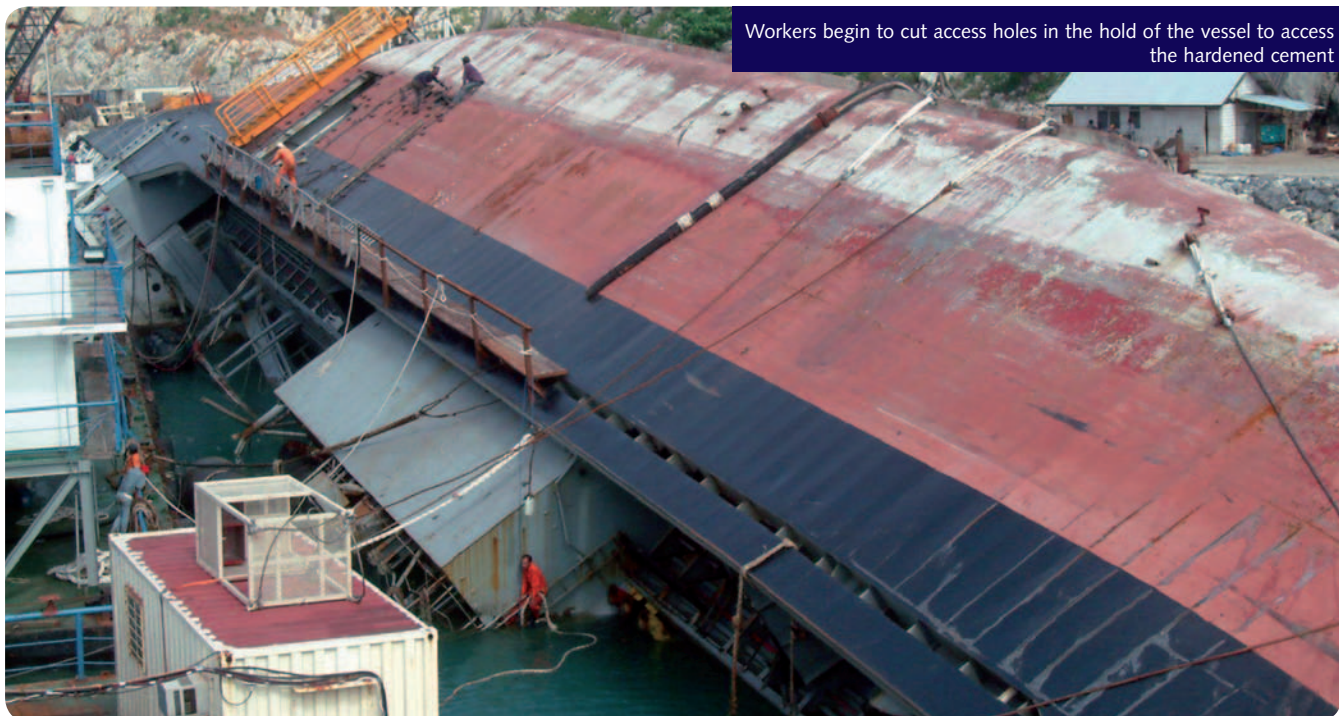
*Banda Aceh, Indonesia was devastated last December by the Asian tsunami. Among the people to lose their lives were 193 Lafarge employees and sub-contractors working at its Aceh cement plant. There are still many problems to solve, with the tragic loss of life never to be forgotten.*

*In this report, ICR hears from Cardox International which has been heavily involved in the project to refloat the cement carrier, *MV SINAR ANDALAS*. There is also news from Lafarge on its future plans for a new plant at Banda Aceh plant and an update on work that has already been completed at PT Semen Andalas.*

The stricken *MV SINAR ANDALAS* filled with 4800t of cement overturned by the 30m (100ft) Tsunami wave



Workers begin to cut access holes in the hold of the vessel to access the hardened cement



With sections of the shell plating removed, the sheer size of the task became evident to the Cardox team



Rock hard cement filled the tilted vessels holds



To remove the cement, the team used a series of Cardox tubes down which high pressure 'blasts' of compressed air loosened the set cement



presumed drowned, washed out to sea, or still inside the overturned stricken vessel.

The Titan Salvage Company was entrusted with the job of either refloating the MV SINAR ANDALAS or dragging her ashore to be cut up for scrap.

Either way, the cargo of 4800t of now hardened cement had to be removed. Titan then called Cardox International Limited in the UK with a view to breaking out the cement, using the patented Cardox system.

A Cardox System was shipped over to the Indonesian shipyard of Batam, where it was installed aboard a barge ready to sail round to the port of Lhok Nga in Banda Aceh.

Once the barge arrived in Lhok Nga and was in place next to the MV SINAR ANDALAS, Cardox International's John Hodson flew from the UK to join the crew of Titan's salvage team aboard the barge in order to oversee the clear-out operations.

Security of expatriate workers was initially high on the agenda, with the threat of the Acehese rebel group that had been fighting for independence for years, still very much a reality. However, with the amount of relief work and support from the international community, the threats from the neighbouring rebels proved to be unfounded, with virtually everyone pulling together in the face of this enormous tragedy.

To utilise the Cardox System, safe access into the cargo holds of the MV SINAR ANDALAS was first required. This meant that large sections of the ship's hold were cut with oxy-acetylene torches. Once this was achieved, the Cardox drill rig could be lowered into the hold and holes drilled in the hardened cement to accommodate the Cardox blasting tubes.

At the time of writing, work is on-going to complete this mammoth task of clearing out as much of the cement as possible prior to righting and refloating the vessel prior to its tow to local repair facilities, where hopefully the vessel might eventually be put back into service.

Back home, John Hodson sees this particular contract as one of his most challenging, but noted that the Cardox system (usually seen in service in precalciner and preheater towers for removing material build-ups) has proved itself as up to this very demanding clean-up operation.

Cement settled all along the deckheads and bulkheads within the upturned holds, setting a sizeable challenge to the Cardox team



### PT Semen Andalas plant

A total of US\$90m is estimated to be needed to rebuild the plant in Aceh, Northern Sumatra, Indonesia, if initial cost estimates are near the mark. In addition to the damage within the port, the plant itself was virtually destroyed during the tsunami devastation.

However, with life getting back to a degree of normality and remaining staff at Andalas keen to resume operations, much of the initial clean-up work has now been completed.

The new cement plant will have a production capacity of approximately 1.6Mt. It is expected to be operational by mid-2007, with the main refurbishment expected to be put out to tender shortly.

Meanwhile, projects financed by donations from regional Lafarge staff and other companies in the group ( a total of €650,000 has been raised) are beginning to take shape:

- The construction training centre has already attracted 192 people who are now working on various reconstruction projects in the region.
- The mosques in the villages of Lhoknga, Lampuuk and Lampaya are being renovated and the restoration of three other neighbouring mosques is to begin soon.
- The mobile clinic is ready to start-up again: the ambulance, equipment and doctors are in place. First aid will be given to displaced mothers and children who are being temporarily housed in camps.
- 2500 pupils from the province of Aceh will soon be given new teaching materials. These have been purchased in partnership with Jakarta International School and the American Women's Association in Jakarta.

Lafarge is also involved in a larger humanitarian programme to rebuild 500

homes in two villages close to its plant. Establishing safe, permanent housing is a priority need. Lafarge, as a member of the local economy, but also as a company fully aware of its social responsibility towards the communities surrounding it, decided to make a direct contribution to this reconstruction effort. The programme that has been put in place aims to rehouse

the original displaced owners, to provide them with safe housing.

To implement this programme, Lafarge has just signed an agreement with three NGOs having complementary skills: Dompét Dhuafa, a local NGO that is close to the villagers and the local authorities, Atlas Logistique, a French NGO specialising in logistics, and Habitat For Humanity, an international NGO recognised for its experience in the construction of low-cost homes for people with modest incomes. The local communities have been consulted on the structure and design of these 36m<sup>2</sup> houses, in compliance with government standards and anti-earthquake specifications. The construction of 300 homes in Lamkruet, which constitutes the first phase of the project, should be completed in May 2006 with many local people also given valuable training in modern construction methods.



The Cardox drill rig is ready to be lowered into the hold