

‘A Unique Project Delivered with Partnership & Trust’

International chemical firm Sabic UK with support from Governments Regional Growth Fund have made strategic investment in upgrading its Teeside chemical facilities to become Europe’s most competitive storage facility and converter of US Shale gas and at the same time creating much needed construction jobs and safeguarding thousands more in the region.



Aerial View of Teeside Chemical Facility

Sabic awarded Balfour Beatty to construct its Ethane storage facility at Teeside, who appointed Cidon Construction to build the new 77000 m³ reinforced concrete circular Ethane containment tank. Cidon in turn, awarded Doka UK to be its full service formwork provider for the project. The statistics and construction methods used are spectacular and unique.

- 77,000 m³ full containment Ethane tank exceeded the recent 60000 m³ tank at Grangemouth
- 67.5 m diameter x 34 m high external wall x 5800 m³ concrete (ready mix)
- Tapered circular wall with 4 full height post-tensioning buttresses
- 9 x 3.65 m construction lifts at an average construction cycle of 15 days
- 500 tonne steel roof frame floated into position on 1.5 bar pressure
- The tank was capped off with a 3.0 m concrete ring beam poured in 2 lifts and 500 mm thick reinforced concrete roof poured in 2 x 250 mm layers



67.5 m diameter Ethane tank under construction

The main challenge for Cidon was to better the tight and demanding construction program. They made 3 key decisions; 1st to prefabricate the wall reinforcement into 2.2 tonne cages, 2nd to construct the perimeter wall in 9 lifts with 100% perimeter formwork and each lift poured in two stepped halves and 3rd to appoint Doka Formwork as their formwork service provider.



Doka MF240 Platforms fixed in place ready for 2nd lift pour



Prefabricated Reinforcing cage being lifted into position

Cidon and Doka have a longstanding trading relationship and have completed many prominent projects together, but this project required some 'out of the box' solutions to exceed the demanding program, exacting construction tolerances, all consciously operating within a demanding and sensitive safety environment. Doka offered and was awarded its 'Full Service Provider' package, which included;

- Pre-build concept planning and advise
- Detailed formwork design from foundation slab to ring beam
- Rental of formwork equipment
- Pre-assembly of >1560 m² of formwork + 68 No x 2.6 m wide main access platforms
- Planned logistics for formwork supply, delivery and returns
- On-site training of Cidon workforce in the safe and efficient use of Doka's formwork
- Supported by Doka's comprehensive administration



Internal Doka MF240 Climbing platforms & Top 50 Circular Formwork

The Doka formwork solution was to design and supply its Top 50 circular formwork in combination with Doka's MF240 climbing system to 100% of the perimeter wall. The benefit of Doka's MF240 climbing platforms on this project was the combination of MF240 with Top 50 circular formwork, (weighing 4.5 tonnes) for lifts 2 – 9 without modification for subsequent lifts. The 1st lift was formed without the need for the MF240 brackets utilising the pre-assembled Top 50 circular formwork.



Doka Top 50 circular formwork, including MF240 Climbing brackets + 2 minus level working platforms