



DILLINGER HÜTTE GTS

STEELS FOR CONSTRUCTIONAL STEELWORK



THE SAMUEL BECKETT
CABLE-STAYED BRIDGE



ELEGANCE IN STEEL

Irish author Samuel Barclay Beckett was born in Dublin on April 13, 1906. Following diverse travels in France, Italy and Germany, he lived exclusively in France from 1937 until his death in 1989. His works were written both in English and French, the author himself frequently translating them between the two languages. Beckett is considered one of the most important writers of the 20th century, and was awarded the Nobel Prize for Literature in 1969. His best known work, the play „Waiting for Godot“, premiered in Paris in 1953.

The harp



Beckett's birthplace, the Irish capital, has now dedicated a newly completed river-crossing to the author, who captured the essence of Irishness in his works like no other writer: the Samuel Beckett Bridge.

This new north-south link over the River Liffey is located in Dublin between Guild Street and Sir John Rogerson's Quay, not far from Macken Street. The asymmetrical cable-stayed bridge, designed by Spanish star architect Santiago Calatrava, is reminiscent of a recumbent harp. This, Ireland's oldest musical instrument, can also be found as the country's symbol on Irish euro coins.

The Samuel Beckett Bridge is 123 m long, up to 33 m wide, and 48 m high, and accommodates four traffic lanes (two in each direction), cycle tracks and pedestrian walkways. The carriageway is retained by thirty-one diagonal stay cables, which are strung on an inclined bow-like pylon structure (six cables to the rear, and twenty-five to the front).

Dillinger Hütte GTS supplied 760 t of structural steel for this elegant structure, including thermomechanically rolled DI MC 355 fine-grained structural steel in thicknesses up to 120 mm, and high-tensile DILLIMAX 690T water quenched and tempered fine-grained structural steel in a plate thickness of 180 mm.

Why DI MC?

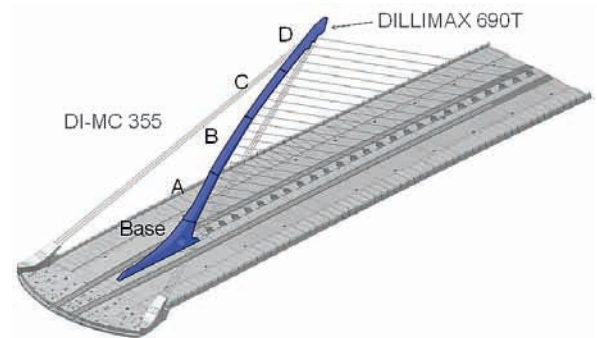
Our DI MC thermomechanically rolled fine-grained structural steels are notable for their greatly reduced carbon and alloying-element contents, and for their high reserves of toughness. These features assure excellent working properties and, in particular, a weldability superior to standard structural steels.



SLENDER DESIGN

In this out-of-the-ordinary bridge design, the pylon is required to bear the greatest loads, while high demands are also made on the workability of the steel used. Both factors influenced material selection decisively. The excellently weldable DI MC 355 thermomechanically rolled fine-grained structural steel was used in the base of the bridge, while high-tensile DILLIMAX 690 water quenched and tempered fine-grained structural steel was selected for the cap of the pylon, due to the exceptional load situation occurring at this point.

Pylon and cap



A BRIDGE TAKES A SEA VOYAGE

The bridge was fabricated entirely in the Dutch port of Rotterdam by the steel contractor commissioned with this work. It was also, literally, shipped from that city. A particular challenge in transporting the bridge was the passage under the former Konigshavenbrug rail bridge, also known as the „De Hef“ vertical lift bridge.

The bridge on its sea-going barge



There was less than 1.5 m of clearance between the highest point of the pylon and the underside of the lifting span of the bridge. The unique cargo then made its way under the Erasmus Bridge, down the Channel and into the Irish Sea, to reach the bridge's destination in Dublin, where it was moved into position on a previously completed concrete pier.

Why DILLIMAX?

DILLIMAX steels are high-tensile water quenched and tempered fine-grained structural steels. EN 1993 1 2 permits the use of these steels for construction purposes in Europe up to a yield strength of 690 MPa. The vital benefit for the architect and the engineer: slender designs, even with ultrahigh loadings.



**The Samuel Beckett
Cable-stayed Bridge,
Dublin**

Client:	Dublin City Council, Department of Transport, Dublin Docklands Authority
Architect:	Dr. Santiago Calatrava Valls
Executing contractor:	Graham Hollandia Joint Venture
Principal heavy-plate supplier:	Dillinger Hütte GTS
Structural steelwork:	Hollandia B.V.



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