



DILLINGER HÜTTE GTS

STEEL FOR SHIPBUILDING



QUEEN MARY 2



## 21,000 TONNES OF HEAVY STEEL PLATE FOR THE WORLD'S LARGEST CRUISE SHIP



She's a legend even now – the Queen Mary 2, the world's largest cruise ship, which was handed over to the British Cunard line, subsidiary of the US cruise organizer Carnival, in December 2003.

France's major shipyard, Chantiers de l'Atlantique, of St. Nazaire, was thus able to fulfill the demanding time schedule for construction: twenty-three months, from January 16, 2002 to December 22, 2003, were needed for completion of this 150,000 t floating palace of luxuries.

### Swimming in luxury

The Queen Mary 2 has been sailing the Atlantic, crossing between Europe and North America, at 30 knots (56 km/h) since the start of 2004. Her 2,620 passengers swim in a sea of luxury: A theatre, a cinema, a planetarium, a discotheque and a casino – there is no lack of leisure opportunities. And, with tennis courts, a golf course, five swimming pools, fitness rooms and both sauna and massage facilities, the sporting amenities are also generous. Need we mention that, with eight restaurants and innumerable bars, including the three-storey „Britannia“, with seating for 1,340, care has also been taken to ensure the passengers' bodily well-being. The passenger facilities are supervised and organized by the 1,300 man crew.

### Steel supplies: Reliability and performance

Surveying the completed, 345 m long vessel, one would scarcely guess that the hull is composed of a virtual jigsaw puzzle of no less than 300,000 individual parts, which were assembled in record time.

Grade	Quantity [t]	Thickness [mm]
LR-A/B/D	<b>13,024</b>	6 - 30
BV-A	104	10 - 18
LR-AH36	<b>3,579</b>	6 - 20
LR-AH36-TM	150	8 - 20
LR-DH36	1,680	14 & 23
LR-E	<b>2,724</b>	23 & 28

Delivery state: As-rolled, normalized, normalizing rolled, thermomechanically rolled

**Total deliveries from Dillinger Hütte GTS: 21,261 t**



The shipyard had to be able to rely on its steel supplier if this demanding completion schedule was to be met. For this reason, a large proportion of the heavy steel plate for the hull was ordered from Dillinger Hütte GTS. Some 21,000 t, spread across a delivery period of ten months, were rolled for this project, mainly at the GTS Industries rolling-mill operated in Dunkirk, northern France, by Dillinger Hütte GTS, and delivered on time to the shipyard.

Plate thicknesses of 6 to 30 mm with acceptance performed in conformity with the Lloyd's Register of Shipping specifications were used. They form the ship's hull, the deck plates and the crossbeams.

For aesthetic reasons, not only tight delivery dates, but also an extremely high plate surface quality, was specified. Extra high-strength steel plates for certain structural elements of the ship helped in optimizing the vessel's weight.

#### **Construction in record time**

Work on the 102 block segments which form the ship's hull started on January 16, 2002. Assembly of the blocks started in July of that year, immediately after the laying of the keel. Following completion of the fore and aft sections of the ship and of the funnel, the Queen Mary 2 was launched on March 21, 2003, ready for equipping in the shipyard's fitting-out basin.

In this way, the principal challenge of this high-prestige project was met: A construction time only half as long as that of the last large Atlantic cruise ship built in St. Nazaire, the „France“. Dillinger Hütte GTS made a vital contribution to the achievement of these demanding targets.





## The Queen Mary 2 Facts and figures

Builder:	Chantiers de l'Atlantique (Alstom Marine)
Owner:	Cunard (GB) – Carnival group (USA)
Length:	345 m
Beam:	41 m
Height:	72 m
Number of passengers:	2,620 (max. 3,090)
Crew:	1,253
Cabins:	1,310 (+ 700 for the crew)
Speed:	30 knots
Draft:	10 m
Construction hours:	8 million hours
Weight:	150,000 t
Cost:	\$ 800 million
Heavy plate deliveries:	Dillinger Hütte GTS (Dunkirk)

Photos: © Alstom Marine



## DILLINGER HÜTTE GTS

AG der Dillinger Hüttenwerke  
Marketing  
D-66748 Dillingen/Saar  
Postfach 1580  
Telefon: + (49) 6831 / 47-34 53  
Fax: + (49) 6831 / 47-99 34 50

GTS Industries  
Marketing  
F-59379 Dunkerque Cedex  
BP 6317  
Telefon: + (33) 3 28 58 40 95  
Fax: + (33) 3 28 29 69 28

e-mail: [info@dillinger.biz](mailto:info@dillinger.biz)  
<http://www.dillinger.de>