

Certificate



Suppl.-No.: 02
to Certificate WF 0910057 HH

WPS-No.: 111MAWT30grp1.1H-L045 of 2008-01-25

Messrs.

Flanders Ship Repair NV

has been approved on the basis of the documents submitted for a procedure test supervised by other independent testing bodies approved by Germanischer Lloyd, in accordance with the "Rules for Classification and Construction II, Material and Welding Technology, Part 3 - Welding" for the following welding procedure:

Manual metal-arc welding with covered electrodes of unalloyed steel pipes

Welding Details

Process: 111 - Manual arc welding with covered electrode (SMAW)
Type of weld: Pipe butt welds, welded from one side in multi-run technique.
Welding equipment: Suited, in accordance with the instructions of the welding supervisor.
Welding data: As for the welding procedure test, see welding procedure specification.
Welding consumables: Covered electrode: "Phoenix Spezial D" (Boehler), GL grade: "3YH10", as well as other similar covered electrodes tested and approved by GL with the relevant grades according to the base materials to be welded.

Edge preparation: V-groove, included angle, root gap as for welding procedure test, see WPS.

Weld build-up: Multi-pass.

Welding heat treatment: Without preheating. In any case dry out. Interpass temperature max. 250°C.

Welders: Welders instructed accordingly and recognized by Germanischer Lloyd with valid welder's test certificates in the respective test group.

Others: ---

Range of application

Base material(s): Pipe strength category GL-R360 and GL-R410 as per GL-Material Rules. Comparable unalloyed steel pipes with consent of Germanischer Lloyd.

Wall thickness(es) [mm]: 3,0 - 11,0

Pipe diameter [mm]: $\geq 45,0$

Positions: PA, PC, PF, PE

Heat treatment condition: As welded.

Design temperature: ---

Particularities, remarks: For welding of pipe class I and II the validity of the welding procedure qualification is one year. It can be prolonged with the help of positive test results of periodical production tests.

Parts of this approval are the a. m. certificate, the above mentioned WPS, if any, and our letter of approval with ref.-no. 014293-09/MWeg of 2009-02-24.

Hamburg, 2009-02-24

Germanischer Lloyd

Martin Wenning

Concerning the period of validity or the extension of approval and the duty to notify GL if the preconditions change under which approval was granted, the statements given in the Rules for Welding are to be observed. Additional requirements, if any, in the covering letter are to be observed. The latest edition of the General Terms and Conditions of Germanischer Lloyd is applicable (see Chap. 1 - Ship Technology, Part 0 - Classification and Surveys). Germanischer Lloyd Aktiengesellschaft; Registered Office Hamburg, HR B 31393.