

# Certificate



Suppl.-No.: 03  
to Certificate WF 1410149 HH

WPS-No.: see others

Messrs. **Kedat Ltd. & Jotan. Ltd.**

has been approved on the basis of the welding procedure test supervised by Germanischer Lloyd and specified in a welding procedure specification (see WPS-No.), in accordance with the "Rules for Classification and Construction II, Material and Welding Technology, Part 3 - Welding" for the following welding procedure:

## Semi-automatic metal-arc active gas welding with shielding gas of but welds on higher-strength hull structural steel grade E-36

### Welding Details

**Process:** 135 - Metal-arc active gas welding (GMAW)  
**Type of weld:** Butt welds welded in multi-run technique from both sides with back gouging / grinding, multi-pass.  
**Welding equipment:** Suited, in accordance with the instructions of the welding supervisor.  
**Welding data:** According to the relevant welding procedure specification of the welding supervisor.  
**Welding consumables:** Wire-gas combination: "Automag 3 / M21" (Wiesenburg GmbH), GL-grade '3YS' and other wire-gas combinations tested and approved by Germanischer Lloyd with the relevant grades according to the base materials to be welded.

**Edge preparation:** As for the welding procedure test, see relevant WPS.

**Weld build-up:** Multi-pass.  
**Welding heat treatment:** Without Preheating.  
Interpass temperature: 250°C maximum.

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

**Others:** WPS no.s: 135/BW/PC/bs/ dd. 2013-11-26 and 135/BW/PF/bs dd. 2013-11-26.  
WPQR no.s: 135/BW/PC/bs/ dd. 2013-12-16 and 135/BW/PD dd. 2013-12-16.

### Range of application

**Base material(s):** Normal-strength hull structural steels grade GL-A to GL-E and higher-strength hull structural steels grade GL-A32 to GL-E36 as per GL rules for materials. Other comparable structural steels with consent of GL.

**Wall thickness(es) [mm]:** 7,5 to 30,0.

**Pipe diameter [mm]:** ---

**Positions:** Butt welds: all positions (except vertical down (PG)).

**Heat treatment condition:** As welded.

**Design temperature:** As for base and filler material.

**Particularities, remarks:** Metal-arc active gas welding with protection against wind and weather. The temperature of preheating for welding of higher-strength structural steels shall be determined in relation to the plate thickness, the chemical composition of the base material, the hydrogen content of the weld metal, the heat input during welding and the temperature of the workpiece. The regulations and recommendations of the manufacturers of the base- and filler materials for welding of higher-strength structural steels have to be observed.

Parts of this approval are the a. m. certificate, the above mentioned WPS, if any, and our letter of approval with ref.-no. 015327-14/AKoc of 2014-08-11.

Hamburg, 2014-08-11

**Germanischer Lloyd**

  
Andreas Koch