

ISO 15401:2000-02 (E)

Ships and marine technology - Bulk carriers - Construction quality of hull structure

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Quality control through construction	2
4.1	Steel material	2
4.2	Steel processing	2
4.3	Fitting and assembly	3
4.4	Welding	4
4.5	Tightness test	5
4.6	Coating	6
5	Hull construction accuracy	7
5.1	Steel material	7
5.2	Marking	9
5.3	Cutting	10
5.4	Bending	12
5.5	Fitting and assembly	15
5.6	Welding	21
5.7	Flatness and finishing	23
5.8	Principal dimensions and deformation	28
5.9	Draught and freeboard	29
5.10	Coating	30
6	Hull construction reports	33
7	Documentation on board	34
Table 1 --	Surface defects of steel plates	7
Table 2 --	Lamination of steel plate	8
Table 3 --	Minus tolerance in thickness for plates of hull structure	8
Table 4 --	Surface defects of casting steel	8
Table 5 --	Position deviation of marking	9
Table 6 --	Deviation of marking dimensions of parts and members	9
Table 7 --	Deviation of marking dimension of block structure	9
Table 8 --	Surface roughness of gas cutting	10
Table 9 --	Notches of gas cutting	10

Table 10 -- Deviation of gas cutting dimension	11
Table 11 -- Deviation of shearing dimension	11
Table 12 -- Deviation of planed and milled edges	12
Table 13 -- Deviation of flanging	12
Table 14 -- Deviation of corrugated plate	12
Table 15 -- Deviation of channelled plate	13
Table 16 -- Bending deviation of sections and built-up profiles	13
Table 17 -- Bending deviation of shell plates	14
Table 18 -- Heating	14
Table 19 -- Position deviation of fillet-welding joints	15
Table 20 -- Deviation of lap-welding joints	15
Table 21 -- Deviation of butt welding joints	16
Table 22 -- Distance between welds	17
Table 23 -- Accuracy of installation dimensions for flat and curved sub-assemblies	18
Table 24 -- Accuracy of installation dimensions of block assemblies	19
Table 25 -- Accuracy of installation dimensions of block assemblies of stern frame	20
Table 26 -- Accuracy of installation dimensions of assemblies including main engine foundation ...	20
Table 27 -- Assembly deviation on the shipway/dock	21
Table 28 -- Deviation of welding bead dimensions	21
Table 29 -- Weld under-cut	22
Table 30 -- Deviation of dimensions of fillet welds	22
Table 31 -- Short bead, tack-welding bead and repairing bead	22
Table 32 -- Arc-strike	23
Table 33 -- Welded joint distortion	23
Table 34 -- Local flatness	24
Table 35 -- Overall flatness	24
Table 36 -- Straightness of inner stiffeners	25
Table 37 -- Staging sockets and lifting eye pieces	25
Table 38 -- Temporary pieces	26
Table 39 -- Holes made erroneously	27
Table 40 -- Repairing by insert piece	28

Table 41 -- Deviation of principal dimensions	28
Table 42 -- Deformation of hull form	29
Table 43 -- Deviation of draught	29
Table 44 -- Deviation of freeboard	29
Table 45 -- Pretreatment of steel surface	30
Table 46 -- Application of shop primer	30
Table 47 -- Cleanliness after second derusting	31
Table 48 -- Surface cleaning before coating	32
Table 49 -- Quality of coating	33
Table 50 -- Film thickness of coating	33