

DIN EN ISO 12215-5:2014-10 (E)

Small craft - Hull construction and scantlings - Part 5: Design pressures for monohulls, design stresses, scantlings determination (ISO 12215-5:2008 + Amd 1:2014) (includes Amendment A1:2014)

Contents		Page
Foreword		4
Introduction		6
1	Scope	8
2	Normative references	8
3	Terms and definitions	9
4	Symbols	11
5	General	13
6	Dimensions, data and areas	14
6.1	Dimensions and data	14
6.2	Areas	14
7	Pressure adjusting factors	16
7.1	General	16
7.2	Design category factor k_{DC}	16
7.3	Dynamic load factor n_{CG}	16
7.4	Longitudinal pressure distribution factor k_L	17
7.5	Area pressure reduction factor k_{AR}	18
7.6	Hull side pressure reduction factor k_Z	19
7.7	Superstructure and deckhouse pressure reduction factor k_{SUP}	20
7.8	Light and stable sailing craft pressure correcting factor for slamming k_{SLS}	20
8	Design pressures	21
8.1	Motor craft design pressure	21
8.2	Sailing craft design pressure	23
8.3	Watertight bulkheads and integral tank boundaries design pressure	23
8.4	Design pressures for structural components where k_{AR} would be $u_{0,25}$	25
9	Dimensions of panels and stiffeners	26
9.1	Dimensions of plating panels	26
9.2	Dimensions of stiffeners	30
10	Plating -- Scantling equations	32
10.1	Thickness adjustment factors for plating	32
10.2	FRP single-skin plating	35
10.3	Metal plating -- Aluminium alloy and steel	36
10.4	Laminated wood or plywood single-skin plating	37
10.5	FRP sandwich plating	38
10.6	Single-skin plating minimum thickness	42
11	Stiffening members requirements	43
11.1	General	43
11.2	Properties adjustment factors for stiffeners	44

11.3	Design stresses for stiffeners	44
11.4	Requirements for stiffeners made with similar materials	45
11.5	Requirements for stiffeners made with dissimilar materials	46
11.6	Effective plating	47
11.7	Overall dimensions of stiffeners	48
11.8	Structural bulkheads	50
11.9	Structural support for sailing craft ballast keel	51
12	Owner's manual	51
12.1	General	51
12.2	Normal mode of operation	51
12.3	Possibility of outer skin damage	51
Annex A (normative) Simplified method for scantling determination		52
Annex B (normative) Drop test for boats of < 6 m		56
Annex C (normative) FRP laminates properties and calculations		59
Annex D (normative) Sandwich mechanical core properties and sandwich calculation		70
Annex E (normative) Wood laminate properties and wood calculations		76
Annex F (normative) Mechanical properties of metals		85
Annex G (normative) Geometric properties of stiffeners		87
Annex H (normative) Laminate stack analysis		104
Bibliography		115