Main changes in NR546

Main changes in Bureau Veritas Rules for Hull in Composite, Plywood, and High Density Polyethylene Materials, November 2022 edition, regarding the previous edition (October 2021) are described as follows.

Rules history

November 2022 edition into force on November 1st, 2022 Contents	Previous edition: October 2021 into force on October 1st, 2021 Contents
Hull in Composite, Plywood, and High Density Polyethylene Materials [NR 546 DT R04 E November 2022]	**Hull in composite Materials and Plywood, Material Approval, Design Principles, Construction and Survey** [NR 546 DT R03 E October 2021]

Section 4 – Raw Materials for Laminates

Topic	*Description*	*Reference*
Combined fabrics	*Correction of "four directional fabric" definition*	*Sec 4, [3.3.6]*
PET foam characteristics	*Correction of PET Foam mechanical characteristic values.*	*Sec 4, Tab 3*
Red Cedar density	*Correction of density value for Red Cedar*	*Sec 4, Tab 5*

Section 7 – Stiffener Analysis

Topic	*Description*	*Reference*
Reduction coefficient for secondary stiffeners analysis	*Definition of a minimum value of the reduction coefficients Cf and Ct for stiffeners analysis under sea or internal pressures.*	*Sec 7, [4.2.1]*
Modification of stiffener parameters calculations	*Modification of stiffener shear rigidity calculation [GzAz].* *Modification of Bending rigidity* *Modification of torsional rigidity calculation.* *Modification of eccentricity of stiffener shear center calculation.*	*Sec 7, [10.1.2]* *Sec 7, [10.1.3]* *Sec 7, [10.1.4] & Tab 3* *Sec 7, Tab 4*
Update of stiffener connection with attached plating	*Clarification of n with different examples (for connection by bonded angle and for connection by adhesive joint).* *Calculation of shear stress only, bending stress not being relevant.*	*Sec 7, Tab 12 and Tab 13* *Sec 7, [11.1.2]*

Section 9 – Plate and Stiffener Analysis for Plywood Structure

Topic	*Description*	*Reference*
Update of plywood symbols	*Modification of plywood symbols naming to be in line with honeycombs symbols naming.*	*Sec 9, Symbols, Figure 1 and Table 1*

Section 10 – Plate and stiffener analysis for high density polyethylene (HDPE) structure

Topic	Description	Reference
Plate and stiffener analysis for high density polyethylene (HDPE) structure	*New section for ships hull made, totally or partly, of high density polyethylene (HDPE) for building based on HDPE sheets.*	*Sec 10*

Appendix 2 – Buckling Analysis for High Density Polyethylene (HDPE) Structure

Topic	Description	Reference
Buckling Analysis for High Density Polyethylene (HDPE) Structure	*New appendix for Bukling Analysis for High Density Polyethylene (HDPE) Structure*	*App 2*