



Release document

NAUTICUS™ Hull

Proven ship design solutions, made for the future

Version: 20.37, January 2026

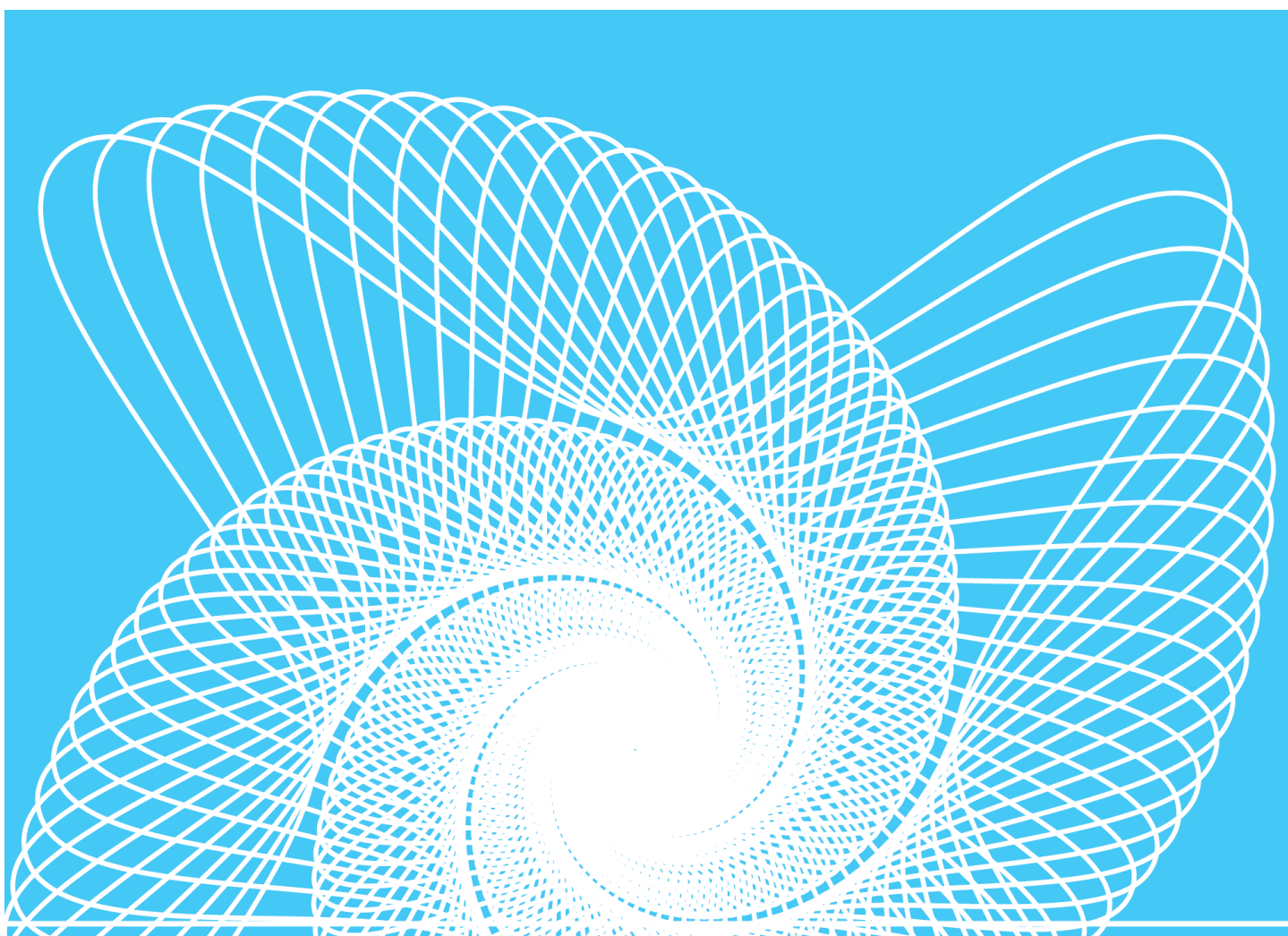


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1 INTRODUCTION

1.1 Purpose of this document

The purpose of this document is to inform users about system requirements, new programs and functionalities, enhancements and bug fixes that have been implemented in Nauticus Hull since the previous release.

Details about the implementations in all programs are not fully covered in this document, and for more information, the user should consult the program documentations being a part of the installation.

It is recommended that the user contact DNV support or the local approval engineers for details about rule implementations in the program and for information about how to use the program for specific ship types.

For information on how to install the program, please see the *Nauticus Hull Installation Guide*, which can be found on our Customer Portal at www.dnv.com/cp.

1.2 Rule sets covered

DNV Rules for classification: Ships (RU-SHIP)

All editions up to and including July 2025 entering into force January 2026.

DNV-CG-0128, Buckling, December 2023 edition is included in DNV Rule edition July 2023 and later editions.

DNV-CG-0129, Fatigue assessment of ship structures, January 2025 edition is included in DNV Rule edition July 2024.

DNV Rules for classification: High speed and light craft (RU-HSLC)

July 2019 Edition.

DNV Rules for classification: Naval vessels (RU-NAV)

July 2023 Edition.

DNV Rules for classification: Offshore Units

Support for prescriptive and FE calculations according to DNVGL-OS-C102 Structural design of offshore ship-shaped and cylindrical units up to and including July 2021, entering into force 1st January 2022.

IACS CSR BC & OT – January 2024 and earlier editions

Enter into force on 1st July 2024

The following rule sets are not covered

DNV rules - July 2015 and older

CSR Tank - July 2012 and older

CSR Bulk - July 2012 and older



These rules are supported by Nauticus Hull “Classic” January 2018 (separate installation).

Note: The Nauticus Hull Classic package (January 2018 V18.5) is no longer distributed with this distribution of Nauticus Hull. Users must download the package from the customer portal.

2 HIGHLIGHTS OF NEW RELEASE

The following main features have been introduced in this version:

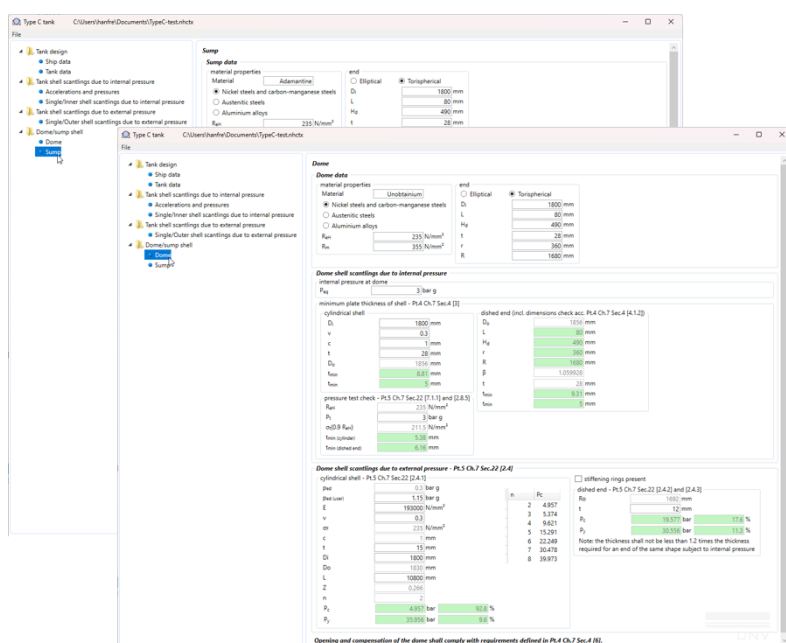
2.1 Type C tank calculation tool: Improved Rule coverage

Support for vacuum insulated designs has been implemented. This includes input of cylindrical part and ends of an outer shell and calculation of requirements based on external pressure.

Calculations for transversely oriented tanks have been added.

The user interface has been reworked, and input has been changed to better suit the user's workflow.

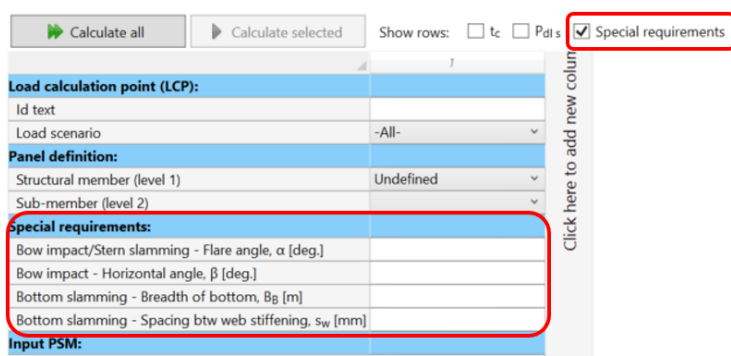
Two new views for calculating tank dome and sump have been implemented. These cover scantling requirements based on both internal and external loads.



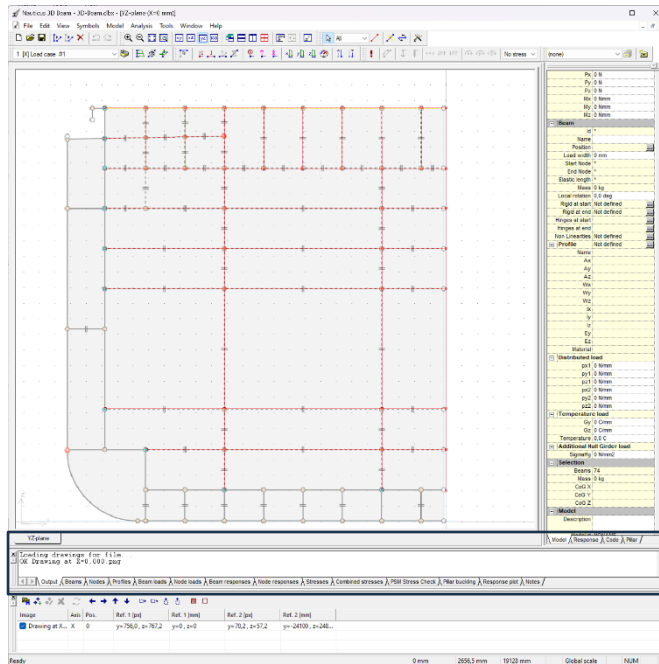
2.2 Rule Calculator: Impact loads for Primary Supporting Members

For DNV Rules, impact load calculations have been implemented for primary supporting members in the Single Skin PSM tab of the Rule Calculator, using the same approach as for Plates and Stiffeners.

To calculate these requirements, enable the *Special Requirements* option by selecting the corresponding checkbox. After activation, provide the relevant input.



2.3 3D-Beam: Background drawing



An image representing a part of a drawing can now be applied to the background of a 2D view and used as guidance while defining beams.

The drawing can be established by either of these two methods:

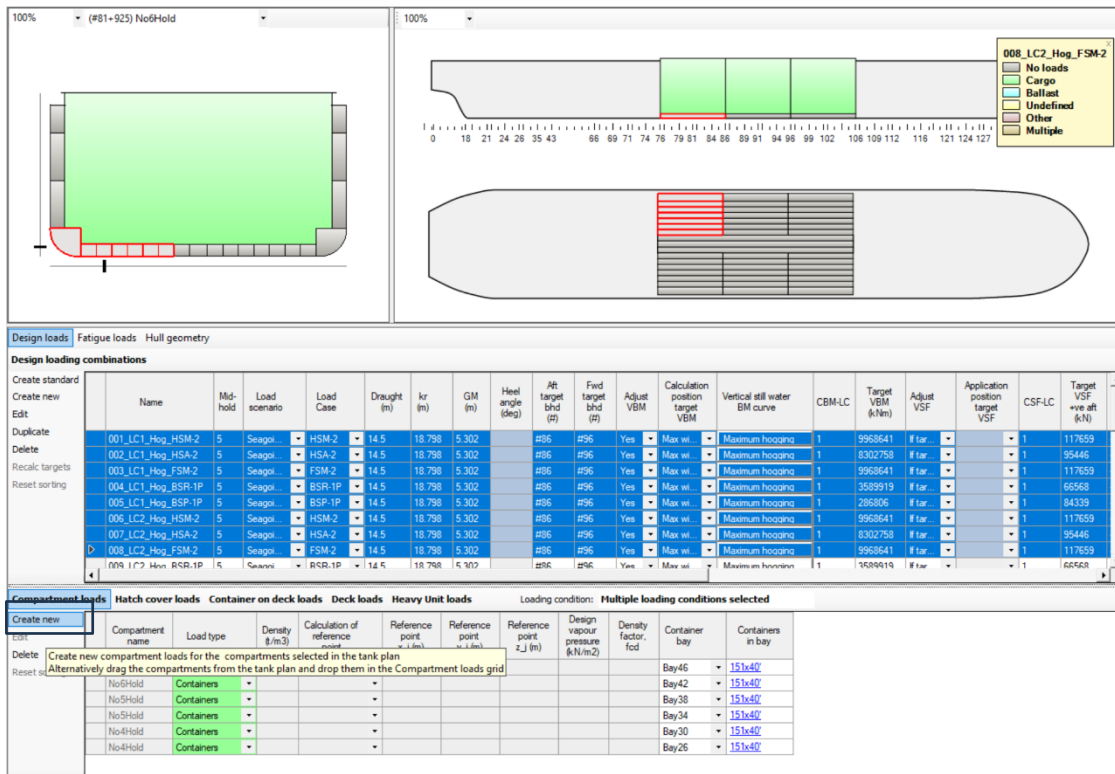
- Import an image file (.jpg, .png, .bmp); or
- Screen clipping of an image

In this version, the drawing will be **raster-based** and cannot be used for snapping. We intend to further improve this functionality, adding snapping to background drawing.

When saving a workspace with 2D drawing(s), it will be on the new file format (*.clbx), that is a zipped folder containing workspace and background drawings.

2.4 FE Manager: Multiple updates of load types

The user may now allow for creating, editing or copying loads to **multiple loading conditions** in one operation. As an example, you may now select multiple loading conditions and create a Compartment load / Deck load / Heavy Unit load that will automatically be applied to all the selected loading conditions.



Name	Mid-hold	Load scenario	Load Case	Draught (m)	kr (m)	GM (m)	Heel angle (deg)	Aft target bnd (m)	Fwd target bnd (m)	Adjust VBM	Calculation position target VBM	Vertical still water BM curve	CBM-LC	Target VBM (kNm)	Adjust VSF	Application position target VSF	CSF-LC	Target VSF +ve aft (kN)
001_LC1_Hog_HSM-2	5	Seagoing	HSM-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	9968641	# var		1	117659
002_LC1_Hog_HSA-2	5	Seagoing	HSA-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	4302768	# var		1	95446
003_LC1_Hog_FSM-2	5	Seagoing	FSM-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	9968641	# var		1	117659
004_LC1_Hog_BSP-1P	5	Seagoing	BSP-1P	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	3589919	# var		1	66568
005_LC1_Hog_BSP-1P	5	Seagoing	BSP-1P	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	286306	# var		1	84339
006_LC2_Hog_HSM-2	5	Seagoing	HSM-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	9968641	# var		1	117659
007_LC2_Hog_HSA-2	5	Seagoing	HSA-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	4302768	# var		1	95446
008_LC2_Hog_FSM-2	5	Seagoing	FSM-2	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	9968641	# var		1	117659
009_LC2_Hog_BSP-1P	5	Seagoing	BSP-1P	14.5	18.798	5.302		#55	#96	Yes	Max wt.	Maximum hogging	1	3589919	# var		1	66568

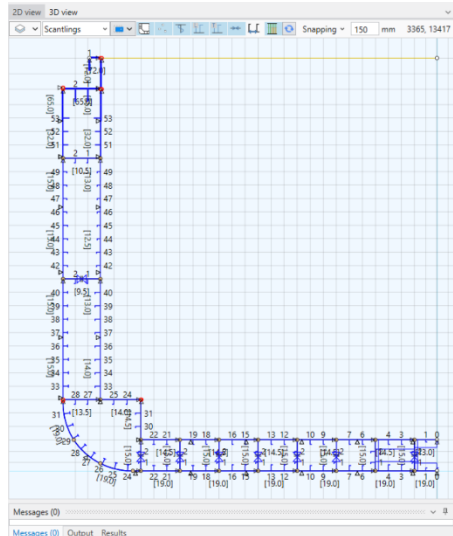
Compartment name	Load type	Density (t/m3)	Calculation of reference	Reference point x (m)	Reference point y (m)	Reference point z (m)	Design vapour pressure (kN/m2)	Density factor	Container bay	Containers in bay
No9Hold	Containers								Bay46	15x40
No9Hold	Containers								Bay42	15x40
No9Hold	Containers								Bay38	15x40
No9Hold	Containers								Bay34	15x40
No9Hold	Containers								Bay30	15x40
No9Hold	Containers								Bay26	15x40

2.5 Section Scantlings

2.5.1 User-defined corrosion additions

Corrosion additions can now be specified by the user. A global default value can be assigned to the cross-section. This global default is then populated to plates and stiffeners/transverse stiffeners (web and flange). The user-defined corrosion additions will then be used in the analysis (Prescriptive, HULS, Fatigue).

As an example, if you intend to run the cross section on gross scantlings, you may specify global default = 0.



Cross-section property grid

Properties

- Cross section properties**
 - Edit cross section properties
 - Update from hullform
- Cross section**
 - Name: Midship
 - Position #: #92+1625 mm
 - Distance from AP: 147.535 m
 - Intersect imported hull def...: ☐
 - Midship cross section: ☒
 - Increased permissible hull...: ☐
- Calculations**
 - Corrosion addition: Rule value: 0.0
- Extension**
 - 2. aft: #91
 - 1. aft: #92
 - 1. fwd: #93
 - 2. fwd: #94
- Standard span and spacing for stiffeners**
 - Span for longitudinals [mm]: 3250
 - Spacing for transverses [mm]: 800
- Material data**
 - Default materials for plates and stiffeners**
 - Use also for HG strength c...: ☒
 - Above strength deck: VL-40FA
 - At deck: VL-36
 - Between: VL-32
 - At bottom: VL-32
 - HI-steel zone height**
 - Let program detect: ☒
 - Continuous strength members above strength deck**
 - Is present: ☒
 - Let program detect: ☒

Plate property grid

Properties

- General**
 - Name: Plate12
 - PanelName: Outer Shell
- Position**
 - Length [mm]: 3250
 - Width [mm]: 2300
 - Reference: Curve, 2300
- End points [mm]**
 - End 1 (y1, z1): (24100, 20244)
 - End 2 (y1, z1): (24100, 22543)
- Calculations**
 - Lock: ☐
 - Corrosion addition: 0
- Scantlings**
 - Actual thickness [mm]: 32
 - Side of geometry: Left
 - Material: VL-32
 - Steel type: Standard steel
- Effectiveness**
 - Bending [%]: 100
 - Shear [%]: 100
- Fatigue**
 - Fatigue class: D
 - Fatigue weld width, d, butt...: 0
 - Fatigue weld width, d, tran...: 0

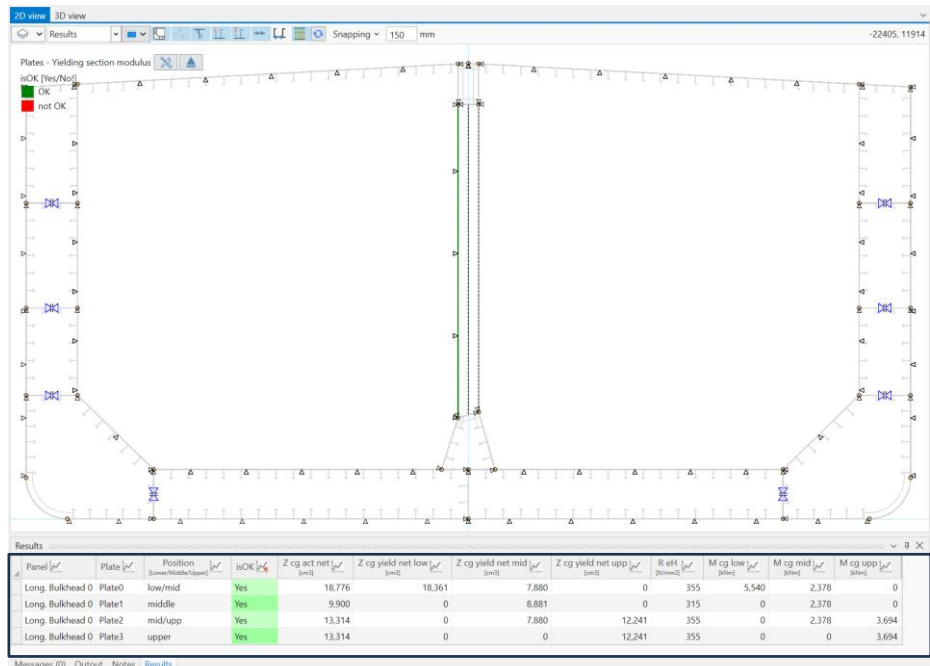
Stiffener property grid

Properties

- General**
 - Id: 48
 - Name: LongStiff59
 - Panel name: Outer Shell
- Orientation**
 - Flange orientation: Right
 - Panel side: Back/inside
 - Web orientation: Normal
 - Web angle to plate [deg]: 90
- Calculations**
 - Lock: ☐
 - Corrosion addition web: 0
 - Corrosion addition flange: 0
- Properties**
 - Material: VL-32
 - Profile: Rolled L 250 x 90 x 10.0 / ...
 - Sniped ends: ☐
- Position**
 - Reference: Global Z, 18416
- Connection of stiffeners to PSM**
- Fatigue**
 - Spans [mm]**
 - Span: 3250
 - Bending span: 3250
 - Shear span: 2818

2.5.2 DNV Rule check: Vertically corrugated bulkhead

For DNV Rules, the prescriptive requirements to vertically corrugated bulkhead according to Pt.3 Ch.6 Sec.4 [1.2.3] are now included.



ResultsTree

- #62+2125 Midship_Corrugations
 - Hull Girder Strength (#62+2125)
 - Plates (#62+2125)
 - Stiffeners (#62+2125)
 - Transverse stiffeners (#62+2125)
 - Corrugated bulkheads (#62+2125)
 - Yielding section modulus
 - Shear flow (#62+2125)
 - Intermediate results
 - Strength assessment
 - Fatigue assessment

Panel [m]	Plate [m]	Position [Lower/Upper]	isOK [Yes/No]	Z cg act net [mm]	Z cg yield net low [mm]	Z cg yield net mid [mm]	Z cg yield net upp [mm]	R _{eff} [mm]	M cg low [mm]	M cg mid [mm]	M cg upp [mm]
Long Bulkhead 0	Plate0	low/mid	Yes	18,776	18,361	7,880	0	355	5,540	2,378	0
Long Bulkhead 0	Plate1	middle	Yes	9,900	0	8,881	0	315	0	2,378	0
Long Bulkhead 0	Plate2	mid/upp	Yes	13,314	0	7,880	12,241	355	0	2,378	3,694
Long Bulkhead 0	Plate3	upper	Yes	13,314	0	0	12,241	355	0	0	3,694

2.5.3 CSR BC&OT Rule check: Hull girder strength using modelled scantlings

For the check of HT-steel extent the material given in the cross-section properties are used together with the HT-steel zone extent:

▼ Material data	
▼ Default materials for plates and stiffeners	
Use also for HG strength c...	☒
Above strength deck	VL-NS
At deck	VL-32
Between	VL-NS
At bottom	VL-NS
▼ HT-steel zone height	
At deck [mm]	4000
At bottom [mm]	0

In case the check box *Use also for HG strength calculation* is set, Section Scantlings compares the used material in the cross-section definition, and if a difference is found, information is given:

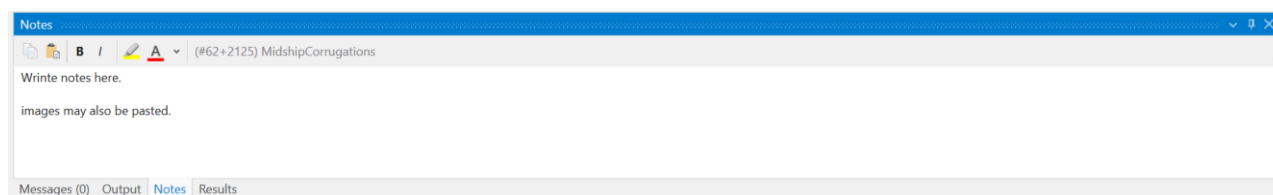
Rule Calculations User value for ReH bottom, differs more than 3% from existing member ReH : 235 N/mm² from Plate: Outer shell;Plate0

In case the check box *Use also for HG strength calculation* is not set (default setting), Section Scantlings is searching for the materials in the cross section and uses this material for the required zone extent calculation. In this case Section Scantlings gives some information about the material that was found:

Rule Calculations Set ReH bottom : 235 N/mm² (k factor 1.00) from Plate: Outer shell;Plate0
Rule Calculations Set ReH side : 235 N/mm² (k factor 1.00) from Plate: Outer shell;Plate8
Rule Calculations Set ReH deck : 315 N/mm² (k factor 0.78) from Plate: Outer shell;Plate13

2.5.4 Notes tab

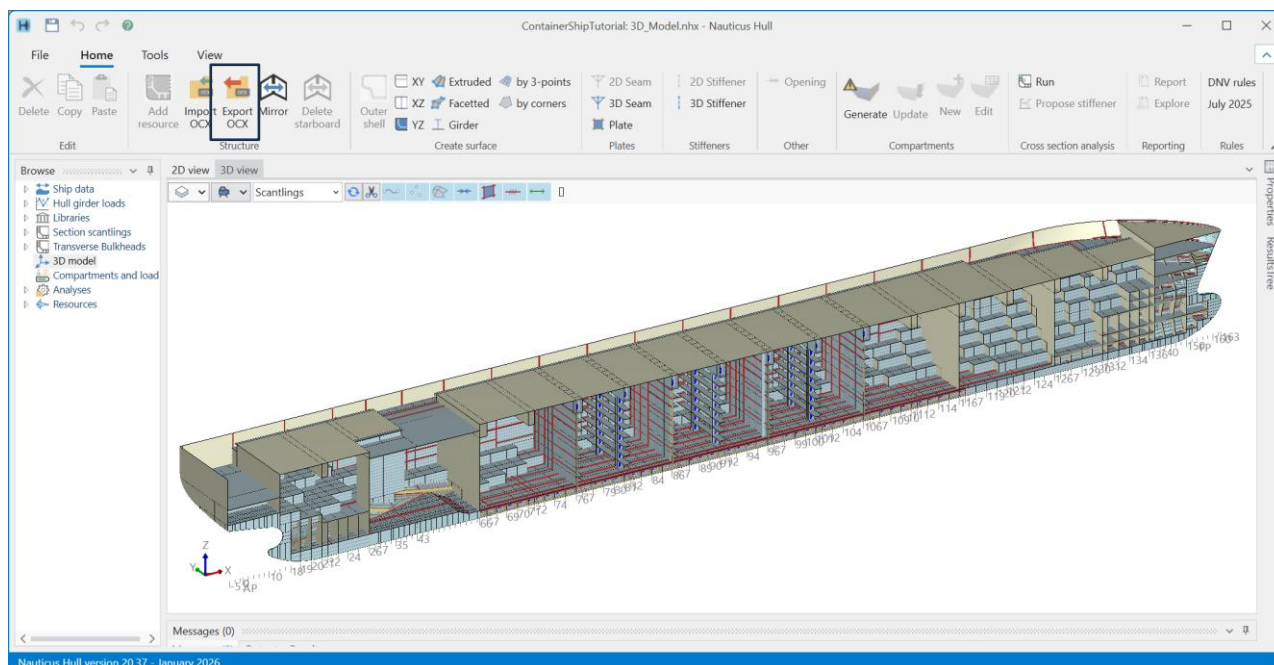
For Section Scantlings and Transverse Bulkhead Tool, a Notes Tab is introduced, allowing the user to take notes and give further description of the modelled scantlings. Images may also be pasted to the Notes tab.



2.6 3D model

2.6.1 Export 3D model from Nauticus Hull to OCX

Nauticus Hull now supports full OCX export of the 3D model created in the program.



With this release, users can export the entire 3D model in OCX format. This enables seamless exchange of 3D models with other systems that support OCX, improving interoperability and collaboration.

Benefits:

- Facilitates integration with external tools and platforms
- Enhances digital workflows by reducing manual conversions
- Improves collaboration and data consistency across systems
- Saves time and increases overall quality in project delivery

2.6.2 OCX import improvements: Mapping of profile types

This release improves the mapping of *OCX BarSection* types to the Nauticus Hull profile catalogue.

Previously, the mapping of *OCX BarSection* types was incomplete. As a result, Nauticus Hull could assign a default profile to stiffeners when the correct mapping was missing.

Update Implemented:

- The mapping of *OCX BarSection* types to the Nauticus Hull profile catalogue is now complete.
- Stiffeners will be assigned the correct profile automatically, ensuring accurate structural representation.

This enhancement improves modelling accuracy and reduces manual intervention, leading to more efficient workflows.

3 ENHANCEMENTS, MODIFICATIONS AND CORRECTIONS

3.1 Enhancements and other modifications

Area	Case #	Description	ID
3D Model		When copying 3D stiffeners or 3D plate seams, overlap check is now implemented, similar to when creating 3D stiffeners or 3D plate seams.	677152
3D Model		When creating 3D plate seams in 2D modelling view, the wizard now supports interactive clicking on existing plate seams / stiffeners as start / end references.	624701
3D-Beam	324643	Corrosion additions for beams, that can be displayed in the Profiles tab, were missing the report. Profiles' Corrosion additions are now included in 3D-Beam's report for Profiles.	221722
Analysis Tools		Some of the Excel spreadsheets were missing revision info. This is now in place for all Excel spreadsheets.	716549
Analysis Tools		In Section Scantlings and Transverse Bulkhead tool, a new tab 'Notes' is introduced, allowing the user to write notes giving additional description.	697652
Analysis Tools		In Rule Calculator's report colour coding is added for the 'Id text' row to show if calculation is OK (green) / Not OK (red).	696553
Analysis Tools		In the Rule Calculator's Pressure tab and Plate and Stiffeners tab, DNV bow impact Rule requirements for Bow door according to Pt.3 Ch.12 Sec.5 [2.4.2] is now implemented.	434605
Analysis Tools		In the Angle Tool, a new copy function is introduced on the context menu 'Copy to Rule Calculator'. This information (angles and position) can be pasted directly to Rule Calculator's Plate and Stiffeners tab by using the new option 'Paste from Angle Tool'.	307499
Resources		A new Excel spreadsheet for fatigue elevation of lifting appliances' supporting structures is added to Rule Calculation Tools.	708845
FE	273355	For Gas fuelled ships with Type C tank according to DNV Rules, the FE Manager now allows for manual inputs of the accidental loading conditions according to CG-0135 Appendix A Table 5.	718803
FE		FE Fatigue tool for type 'a', 'b' or 'c' according to DNV Rules now allows for manual inputs of stress components and are not depending on a SESTRA R1.SIN result file.	683918
FE		In FE Manger, for Bulk Carriers, the method for calculating the shear force correction is improved. User may now in Compartments and loads, under Bulk cargo hold data, specify length and breadth of cargo hold.	660214
FE	305631 348351	In the FE Fatigue tool, for DNV Rules, fatigue strength calculations for Type 'b' and Type 'c' area now available.	171659
Rules	192328	For CSR BC& OT, user can now specify that the program shall use modelled scantlings for determining permissible hull girder	559427

		bending stress for hull girder bending strength assessment according to Pt.1 Ch.5 Sec.1 [2.2.1].	
Rules	265250	If LFL fuelled was enabled under Ship data -> Applicable rules, LFL load type was by default applied to all fuel oil tanks when generating prescriptive loads. Now changed so default load type is Fuel oil, even if LFL fuelled is enabled.	703606
Section Scantlings		In the results grids (Section Scantlings and TBHD tool) when selecting Advanced table, this setting is now kept when switching between different results grids.	696385
Section Scantlings	252643	For longitudinal and transverse stiffeners with sniped ends, yielding results according to Rules are now provided. For DNV Rules, factors for stiffeners with simply supported ends are applied, ref Pt.3 Ch.6 Sec.5 [1.1]. For CSR BC&OT, no yielding results are provided with analysis warning stating that a direct analysis needs to be performed, ref Pt.1 Ch.6 Sec.5 [1.2].	679077
Section Scantlings	172189	The report's listing of compartments data is now aligned with Compartments and loads GUI: one table for each tab under Compartments and loads.	528783
Section Scantlings		User may specify corrosion additions. A global default value can be specified, in addition to local values on plates / stiffeners. Specifying global default value of 0 means that the cross-section analysis is run on gross scantlings for all requirements (prescriptive HULS, fatigue).	261838
Ship Data		When Polar ice class is enabled under Ship data -> Applicable rules, longitudinal position of Bow area Sub-regions are now automatically determined under Ship data -> Ice class.	655455

3.2 Corrections

Area	Case #	Description	ID
3D Model		Summary: This update improves the handling of function codes in OCX format within Nauticus Hull. Details: Previously, when a plate had a function code, no corresponding position code was mapped in Nauticus Hull. This could lead to incomplete or inconsistent mappings. New Rule: Plates with function codes will now be mapped to panels if there is no conflict between codes. Panel codes take precedence in cases where both plate and panel codes exist. Impact: This change ensures more consistent and accurate mapping of function codes, reducing ambiguity and improving data integrity in structural modelling workflows.	719179
3D Model		Summary: This update addresses an issue affecting the smoothness of the outer shell during OCX imports. Details: In some cases, seams on the outer shell introduced during OCX import could distort the smoothness of the hull surface in Nauticus Hull. This resulted in visual and geometric inconsistencies. Fix Implemented: Seams on the outer shell are now handled correctly during OCX import. The hull surface retains its intended smoothness, ensuring accurate geometry and improved visual quality. Impact: This fix enhances the reliability of OCX imports and reduces the need for manual adjustments, improving overall modelling efficiency.	717334
3D Model		Summary: This update resolves an issue with OCX file imports involving cutouts. Details: Previously, when importing an OCX file containing cutouts that crossed a panel boundary, the cutouts were not created in Nauticus Hull. This resulted in missing geometry and incomplete structural representation. Fix Implemented: Cutouts that span across panel boundaries are now correctly created during OCX import. This ensures accurate modelling of openings and improves consistency in structural data. Impact: Users will now experience reliable cutout generation for complex panel configurations, reducing manual corrections and improving workflow efficiency.	672453

3D Model		For 3D models imported via OCX, Nauticus Hull could not successfully create independent Section Scantlings cross sections when using 'Intersect 3D model/hull definition' in the 'New cross section' dialog. Corrected.	698857
3D Model		When modelling 2D stiffeners and 2D plate seams, the overlap check was not working as intended in some special cases. Overlap check now improved for fully and partially overlapping 2D stiffeners and 2D plate seams.	691163
3D Model		When an OCX panel is limited by an outer contour, there is a possibility that tiny curves on the panel surface very close to the outer contour are not included in the Nauticus surface created with the outer contour as a limit. This may result in an empty surface. This issue has been fixed with this release.	680277
3D Model		The Copy dialog did not allow for negative inputs with [m]. Corrected.	679407
3D Model		For a 3D model imported from NAPA, when intersecting the 3D model for creating a Section Scantlings cross section, the outer shell was wrongly displayed due to tolerance issues in the 3D model. Corrected.	676297
3D Model		When attempting to delete plate seam and plate at the same time, new plates was wrongly created. Corrected.	673405
3D Model		Nauticus Hull can now handle cut-outs from openings projected onto a panel, which partially lies outside the panel boundary. The projected cut-out will modify the panel boundary.	672919
3D Model		When exporting to GeniE, geometries that was assigned function type hatch side coaming were not assigned any wet surface property or corrosion addition. Corrected.	583494
3D Model		Double-clicking for selecting all scantlings belonging to same panel was depending on clicking speed. Now improved to be more stable.	563640
3D-Beam		When copy or split a beam, the following properties were lost: beam name, rule loads and buckling parameters. Corrected.	717182
3D-Beam	271603	For unsymmetrical profiles, the beam buckling results in some cases gave wrong results. Now corrected so user-defined strong axis / weak axis end constrain factor are used in the buckling analysis.	714954
Analysis Tools		Some of the Excel spreadsheets were not using decimal separators as defined by the Windows settings. This is now corrected so if '.' is set as decimal operator in the windows settings, '.' will be the allowable decimal operator for the Excel spreadsheets.	711867
Analysis Tools		The new General Cross Section tool introduced in NH V20.36 July 2025 idealised stiffener scantlings as areas in the stiffener's centre of gravity. The representation of stiffeners is now improved, ensuring correct results for a simple model with plate flange and stiffener profile.	698402
Analysis Tools		The new general cross section tool, introduced in NH V20.36 July 2025, were depending on NH Classic installation. This dependency is now removed.	697494

Analysis Tools		After importing a drawing, typically for drawing check, if the user renames the drawing, the original drawing is lost. Now allowing for re-naming of drawings.	691467
Analysis Tools		For vertically stiffened longitudinal plating in way of horizontal neutral axis, when opening Single Panel Buckling Tool (SPBT) from Section Scantlings, the special requirements according to DNV Rules Pt.3 Ch.8 Sec.4 [4.1.1] was not automatically set in SPBT. Corrected.	656654
Analysis Tools		For CSR BC&OT, when using Rule Calculator's tab for Pressure - PSM, the calculation failed if a selected compartment were for at least one loading condition were missing compartment load. Corrected so the calculation allows for empty compartments.	92308
Analysis Tools		In the Rule Calculator, for 'Horizontal on transverse structure' stiffener, when Y- and Z-position for stiffener is not given, Load Calculation Point (LCP) was wrong. Now corrected to be at mid-span according to Rules.	92172
Compartments and Loads	330633 371335	For Fatigue loads, when changing trading route, the environmental factor f_e was not automatically updated. Corrected.	250154
FE	268163	In FE Manager, when exporting hatch cover reaction forces to GeniE, the point load was applied to the nearest plate intersection or beam start / end point. Improved and now exporting to the specified hatch cover stopper position.	709591
FE	260674	FE Manager's load template for Independent prismatic tank Type A/B foremost hold according to CG-0133 Sec.4 Table 3, for LC 8 and LC9 the foremost tanks surrounding the independent tank was wrongly flooded. Corrected.	694781
FE		In FE manager, Calculation of Reference point is now disabled when not in use (load scenario Harbour, Testing and Overfilling). Calculation of Reference point is now included for Load type LFL Fuel.	688520
FE	253906	For rounded hopper knuckle, the FE Fatigue tool was in some cases not able to import stress components from finite element file. Corrected.	682098
FE		FE Manager's wizard for Copy to XML file, the tool tip giving offset description is improved for better understanding.	92307
Resources	258777	In the Rudder tool, for rudders where both lower corners are having different z-value, the mean height and mean breadth of the rudder blade was not correctly calculated. Corrected.	691576
Resources		For Northern Baltic Ice class Ice(1A*) and Ice(1A*F), the Rule update introduced in July 2018 rule edition for the additional local fore foot strengthening is now included in the Excel spreadsheet for Ice Class, Baltic.	686693
Resources	248750	In the Excel spreadsheet Superstructure and deckhouse according to CSR BC&OT, inputs for static distributed loads on unexposed decks were missing. Corrected and now used in the calculations.	670347
Resources	412110	When importing a hull form that includes both port and starboard side, the calculated waterplane areas under ship data was not correctly calculated. Now corrected.	371195

Resources	327402	The Scanning tool for bow impact is improved for hull forms with knuckles.	243891
Rules	176710	For single skin side frames in way of ballast holds, section modulus requirement from heavy ballast pressures were not using (reduced) bending span but (full) side frame span. Applied to CSR BC&OT and DNV Rules. Corrected.	529777
Rules		For CSR BC&OT, geometry objects in Section Scantlings with position code Accomodation deck were missing the minimum static distributed load according to Pt.1 Ch.4 Sec.6 [5.2.1]. Corrected.	679706
Rules		For DNV Rules Pt.3 Ch.8 Sec.2 Table 2, foot note 3) was never identified by Section Scantlings or Rule Calculator, as it wrongly assumed that all stiffeners were taking part in hull girder bending. Now corrected so the following stiffeners will never take part in hull girder bending: transverse stiffeners, or longitudinal stiffeners with sniped ends, or longitudinal stiffeners attached to panel / plate with 0% hull girder effectiveness.	691035
Rules	255408	For DNV Offshore Rules, IGC conditions could be specified in Compartments and loads under Survival loads but were not used in the analysis (Section Scantlings or Rule Calculator). Corrected.	685233
Rules	253001	The additional weather deck cargo requirements for OSV according to Pt.5 Ch.9 Sec.2 [2.4.1] and [2.4.2] were only implemented for members with position code Strength deck. Now, same requirements are also implemented for position code Weather deck.	679903
Rules	190781	For imported catamaran hull forms / asymmetrical hull forms, the bow impact angles for EPP's and stiffeners are now always taken from the correct position.	556053
Rules		The minimum stiffener section modulus requirements for OSV according to Pt.5 Ch.9 Sec.2 [3.1.3] was limited to position code Side. Now position code Transom is added, as the requirement also applies to ship's stern.	291389
Rules		For DNV Rules, the ship type requirements to superstructures and deckhouses for OSV+ and Standby vessels according to Pt.5 Ch.9 Sec.2 [3.4.3] were only implemented for longitudinal structures. Now corrected to also include superstructure ends and deckhouse ends.	291086
Section Scantlings	273529	For a workspace with an imported hull form, if outer shell stiffeners for a given cross section were not mapped to the imported hull form (y/z coordinates not matching), 0 mm stiffener spacing was wrongly used. Now corrected so if cross section's outer shell stiffener y/z coordinates are not matching hull form, stiffener spacing will be calculated in cross section's y/z plane.	719552
Section Scantlings		When using the Update from hull form command, the end connection and shear connection properties were lost. Corrected.	719508
Section Scantlings		For panels with cut-out at panel start/end node, the shear flow failed during analysis and a warning was given in the Messages window. Corrected.	717937

Section Scantlings		For DNV Offshore Rules, the analysis gave false warning messages in the Messages window for user specified vertical wave shear force. This is now removed, and no warning message will be given if user defined vertical wave shear force is greater than Rule value.	714934
Section Scantlings		In the results grid for Hull girder shear stress, the dynamic warping shear stress induced by hull girder torsion according to DNV Rules Pt.3 Ch.5 Sec.3 [4.2.3] was correctly calculated but always reported 0 in the advanced view. Corrected so this intermediate value is now also shown.	711814
Section Scantlings	252643	For a transverse stiffener, when assigning sniped ends property, the span information was lost. Corrected so span information is now also shown for transverse stiffeners with sniped ends.	708321
Section Scantlings		In the wizard for longitudinal stiffeners, the inputs in the Wizard tab were not updated when switching between 'Curve' and 'Global Y'. Corrected.	698608
Section Scantlings		When importing from Nauticus Hull Classic a Section Scantlings cross section with corrugated longitudinal bulkhead in CL, the CL bulkhead was missing. Corrected so all geometries and scantlings now are successfully imported.	694707
Section Scantlings		When switching between different Section Scantlings cross sections some accumulation of memory usage is now fixed and released from the memory.	693500
Section Scantlings		For ore carriers according to DNV Rules, the hull girder shear strength requirements in harbour conditions according to Pt.5 Ch.1 Sec.7 [5.1.6] was removed from the July 2017 Rule edition but overlooked in Nauticus Hull. The requirement is now removed for DNV Rule editions July 2017 and later.	691468
Section Scantlings		If splitting a plate with a user defined bending/shear effectiveness, all previously set bending/shear effectiveness for all plates on the same panel were lost. Corrected.	679821
Section Scantlings	251519	For DNV Rules, the special requirement for side shell plating for OSV according to Pt.5 Ch.9 Sec.2 [2.3] were not limited to check if the plating was located at the ship's full breadth. Now corrected to check that the plate has y-coordinate at ship's full breadth.	676430
Section Scantlings		After running analysis and displaying results in both 3D view and 2D view, if changing to Scantlings view for 2D view and displaying any property, the 3D view was unintentionally impacted. Now corrected so any change to the 2D view is not impacting the 3D view.	491758
Section Scantlings		For cut-outs placed in way of plate seams, the shear flow failed during analysis and an error message was given in the Messages window. Corrected.	422608
Section Scantlings	305817	A hard-coded maximum stiffener spacing of 1500 mm is now removed and gives correct stiffener spacing when modelled stiffeners spacing is greater than 1500 mm.	171793
Section Scantlings	279845	For Production and storage units according to DNV Offshore Rules, if speed set to 0.0 knots in Ship data, Nauticus Hull provided an error message in the Messages window (work around was typically	112754

		to set 0.1 knots). Corrected so 0 knots are acceptable inputs for Production and storage units.	
Transverse Bulkhead	266178	For members subject to Load Line pressures according to DNV Rules, conservative considerations were made when determining the vertical LCP (Load Calculation Point) for plates and stiffeners. Corrected.	706656
Workspace		When importing a Poseidon workspace with negative frame numbers to Nauticus Hull, the operation was cancelled. Corrected.	694549
Workspace		If trying to import a workspace with illegal characters, the program crashed. Corrected now and the user is prompted to choose a different name.	106308



4 TECHNICAL NOTES

4.1 Hardware requirements

Minimum Memory	Recommended Memory	Minimum free Storage	Minimum Screen resolution
16 GB	32 GB or more	8 GB	1280 x1024

4.2 Operating system requirement

- Windows 10 or Windows 11

4.3 Software requirements

- Excel and Word from Microsoft Office 2010 with SP2 or newer.
- Microsoft .NET Framework 4.8. (Included in Windows 10 and 11)
- The Local Model Load Applier console application, accessible from GeniE, requires .NET 8.0.



5 OTHER PRODUCT INFORMATION

5.1 Programs and versions

The following programs are available in this release:

Program Version
Nauticus Hull v20.36
Application version manager
GeniE64
License manager
Sesam converters 64
Sesam manager
Sestra64
Submod

Version number of Sesam component in the FEA package can be found in file *PackageContents.xml* located together with the installation.

5.2 Usage of open source/free distributable libraries

Library	Purpose	Public licence	Source
IxMilia/Iges	Read/Write IGES files	Apache License 2.0	GitHub
HDF5	Read/Write HDF5 files	https://support.hdfgroup.org/ftp/HDF5/releases/COPYING	https://portal.hdfgroup.org
Live Geometry	2D viewer	Microsoft Public License (Ms-PL)	https://archive.codeplex.com/?p=livegeometry
AvalonEdit	Text editor	MIT	https://github.com/icsharpcode/AvalonEdit
AutoFac	IoC container	MIT	https://github.com/autofac/Autofac
Log4Net	Message log	Apache License 2.0	https://logging.apache.org/log4net/
MathNet.Numerics	LMLA	MIT	NuGet Gallery MathNet.Numerics 5.0.0



5.3 Software Support

Email: Software.Support@dnv.com

Web: [Technical software support](#)

[Customer Portal](#)

- download of
 - new or old releases
 - release documents
 - installation guides
 - user manuals
- registration and follow-up of support request
- Knowledge base / FAQ's



About DNV

DNV is a global quality assurance and risk management company. Driven by our purpose of safeguarding life, property and the environment, we enable our customers to advance the safety and sustainability of their business. Operating in more than 100 countries, our professionals are dedicated to helping customers in the maritime, oil & gas, power and renewables and other industries to make the world safer, smarter and greener.