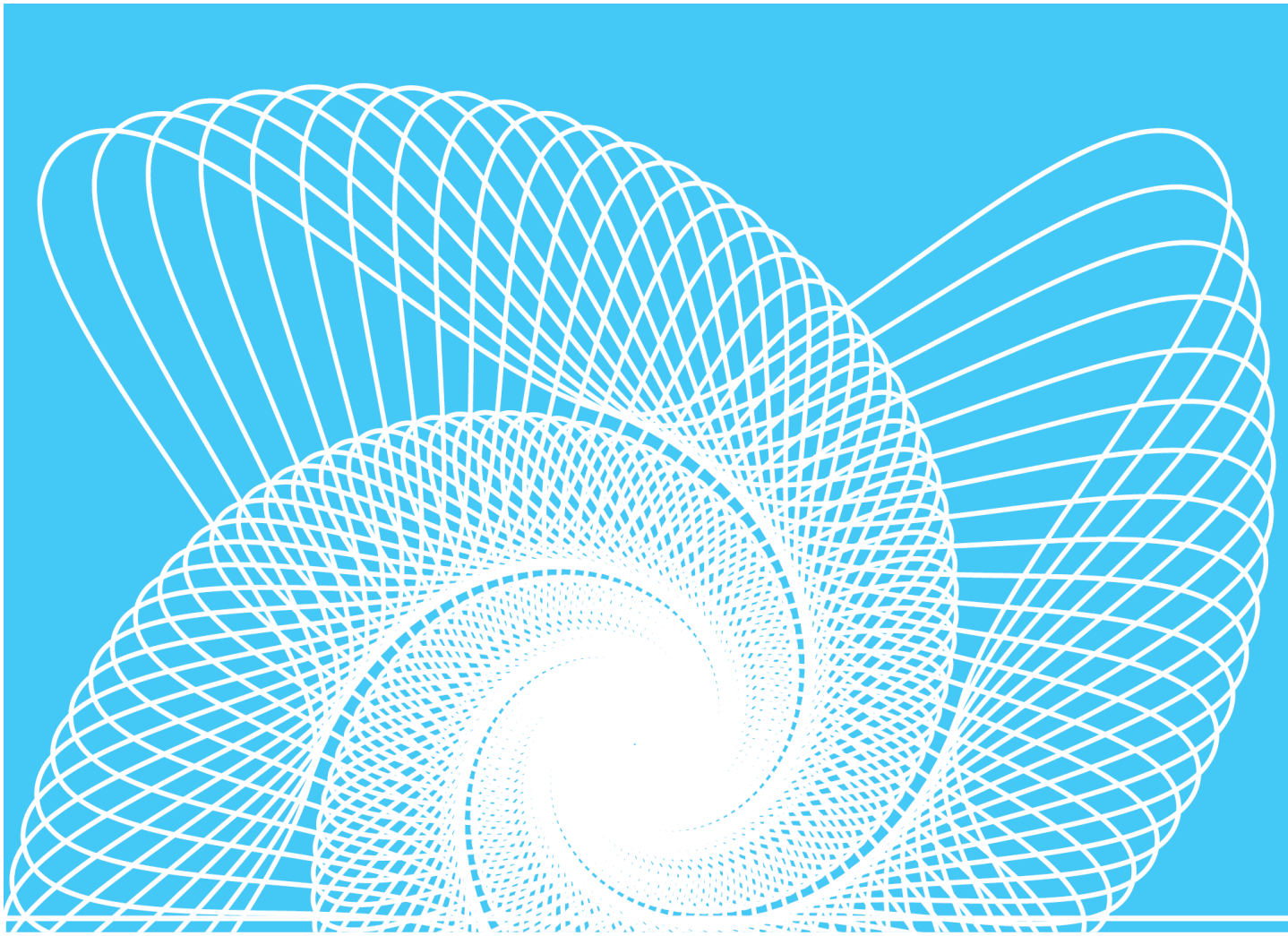
Release document

NAUTICUS™ Hull

Proven ship design solutions, made for the future

Version: 20.36, July 2025



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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 2024 entering into force January 2025.

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).

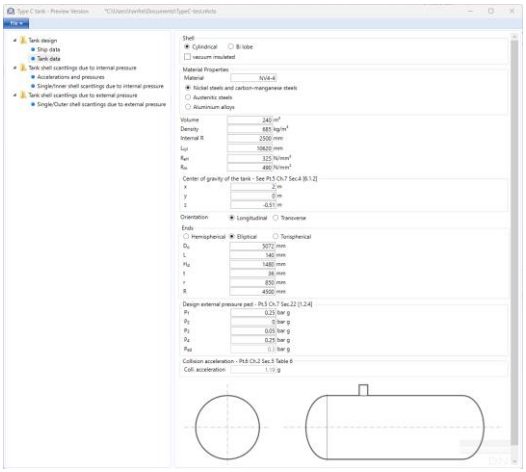
Note: The Nauticus Hull Classic package (January 2018 V18.5) containing the General Cross Section and PULS tools are no longer distributed with this distribution of Nauticus Hull. Users must download the package from the customer portal.

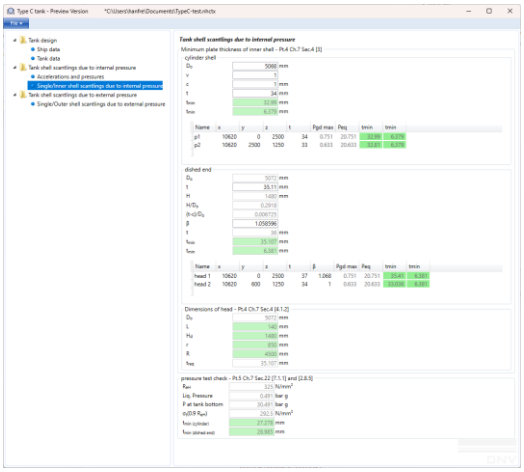
2 HIGHLIGHTS OF NEW RELEASE

The following main features have been introduced in this version:

2.1 Type C tank calculation tool

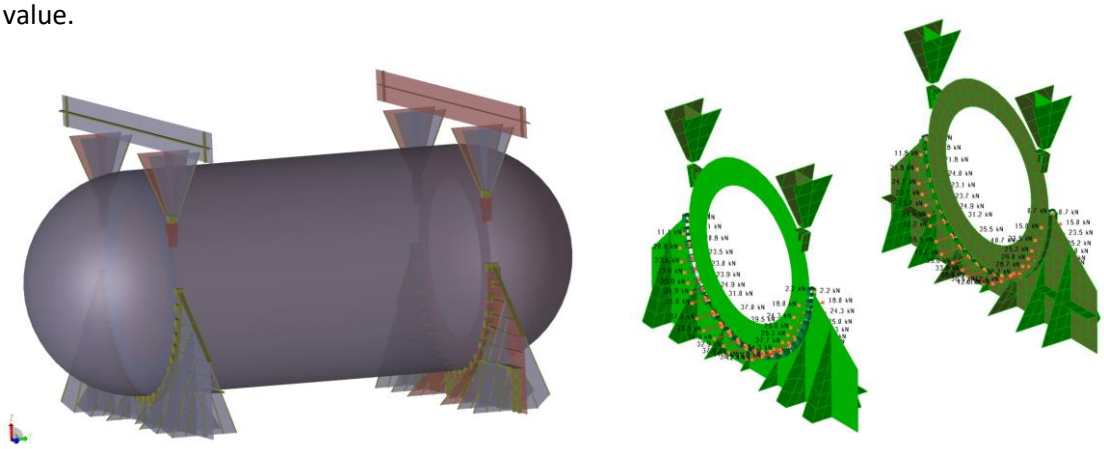
A tool for the prescriptive calculation of Type C tanks is being implemented in Nauticus Hull. The preview version included in this release covers the input of all required ship and tank data, the calculation of accelerations and pressures, the calculation of scantling requirements for shell and end due to internal pressures and the buckling check based on external pressures. The development is ongoing and support for dome/sump/manhole as well as openings/reinforcements calculations will follow along with support for additional designs and orientations.





2.2 Type C tank FE models – distribution of saddle support friction forces

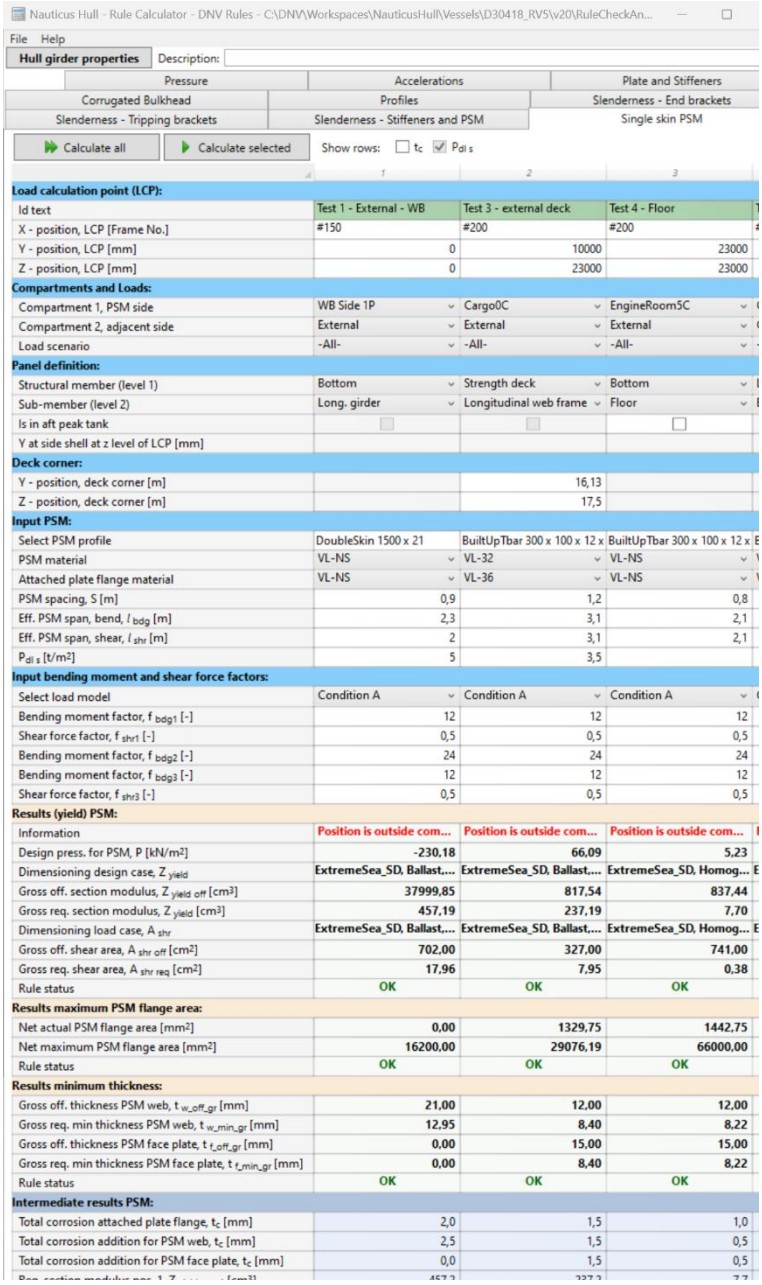
For finite element models with Type C tank arrangements, Tank Support Coupling Forces (TSCF) tool, run from GeniE's Activity Monitor, can now distribute friction forces in way of saddle supports. TSCF tool's user interface is same as for Type A/B arrangements, and the program will automatically detect tank type and C-type tank orientation (longitudinal/transverse). The user may specify the appropriate friction coefficient value.



2.3 Rule Calculator

2.3.1 New Single skin girder tab

Rule Calculator now includes a new tab for calculating Single Skin PSM according to DNV rules. This calculation addresses both yielding requirements and minimum thickness requirements for PSM.



	1	2	3
Load calculation point (LCP):			
Id text	Test 1 - External - WB	Test 3 - external deck	Test 4 - Floor
X - position, LCP [Frame No.]	#150	#200	#200
Y - position, LCP [mm]	0	10000	23000
Z - position, LCP [mm]	0	23000	23000
Compartments and Loads:			
Compartment 1, PSM side	WB Side 1P	Cargo0C	EngineRoom5C
Compartment 2, adjacent side	External	External	External
Load scenario	-All-	-All-	-All-
Panel definition:			
Structural member (level 1)	Bottom	Strength deck	Bottom
Sub-member (level 2)	Long. girder	Longitudinal web frame	Floor
Is in aft peak tank			☐
Y at side shell at z level of LCP [mm]			
Deck corner:			
Y - position, deck corner [m]		16,13	
Z - position, deck corner [m]		17,5	
Input PSM:			
Select PSM profile	DoubleSkin 1500 x 21	BuiltUpTbar 300 x 100 x 12 x	BuiltUpTbar 300 x 100 x 12 x
PSM material	VL-NS	VL-32	VL-NS
Attached plate flange material	VL-NS	VL-36	VL-NS
PSM spacing, S [m]	0,9	1,2	0,8
Eff. PSM span, bend, l_{bdg} [m]	2,3	3,1	2,1
Eff. PSM span, shear, l_{shr} [m]	2	3,1	2,1
$P_{dl\ s}$ [t/m²]	5	3,5	
Input bending moment and shear force factors:			
Select load model	Condition A	Condition A	Condition A
Bending moment factor, f_{bdg1} [-]	12	12	12
Shear force factor, f_{shr1} [-]	0,5	0,5	0,5
Bending moment factor, f_{bdg2} [-]	24	24	24
Bending moment factor, f_{bdg3} [-]	12	12	12
Shear force factor, f_{shr3} [-]	0,5	0,5	0,5
Results (yield) PSM:			
Information	Position is outside com...	Position is outside com...	Position is outside com...
Design press. for PSM, P [kN/m²]	-230,18	66,09	5,23
Dimensioning design case, Z_{yield}	ExtremeSea_SD, Ballast,...	ExtremeSea_SD, Ballast,...	ExtremeSea_SD, Homog...
Gross off. section modulus, $Z_{yield\ off}$ [cm³]	37999,85	817,54	837,44
Gross req. section modulus, Z_{yield} [cm³]	457,19	237,19	7,70
Dimensioning load case, A_{shr}	ExtremeSea_SD, Ballast,...	ExtremeSea_SD, Ballast,...	ExtremeSea_SD, Homog...
Gross off. shear area, $A_{shr\ off}$ [cm²]	702,00	327,00	741,00
Gross req. shear area, $A_{shr\ req}$ [cm²]	17,96	7,95	0,38
Rule status	OK	OK	OK
Results maximum PSM flange area:			
Net actual PSM flange area [mm²]	0,00	1329,75	1442,75
Net maximum PSM flange area [mm²]	16200,00	29076,19	66000,00
Rule status	OK	OK	OK
Results minimum thickness:			
Gross off. thickness PSM web, $t_{w_off_gr}$ [mm]	21,00	12,00	12,00
Gross req. min thickness PSM web, $t_{w_min_gr}$ [mm]	12,95	8,40	8,22
Gross off. thickness PSM face plate, $t_{f_off_gr}$ [mm]	0,00	15,00	15,00
Gross req. min thickness PSM face plate, $t_{f_min_gr}$ [mm]	0,00	8,40	8,22
Rule status	OK	OK	OK
Intermediate results PSM:			
Total corrosion attached plate flange, t_c [mm]	2,0	1,5	1,0
Total corrosion addition for PSM web, t_c [mm]	2,5	1,5	0,5
Total corrosion addition for PSM face plate, t_c [mm]	0,0	1,5	0,5

2.3.2 Plates and stiffeners tab

The ice class requirements for Baltic and Polar have been incorporated into the Plates and Stiffeners tab. These requirements are consistent with those outlined in the Section Scantlings.

Pressure | Accelerations | Plate and Stiffeners | Trv. Corrugated Bulkhead | Press

Calculate all | Calculate selected | Show rows: ☐ Stiffener position ☐ t_c ☐ f_{bdg} ☐ Special requirements ☑ Ice class requirements

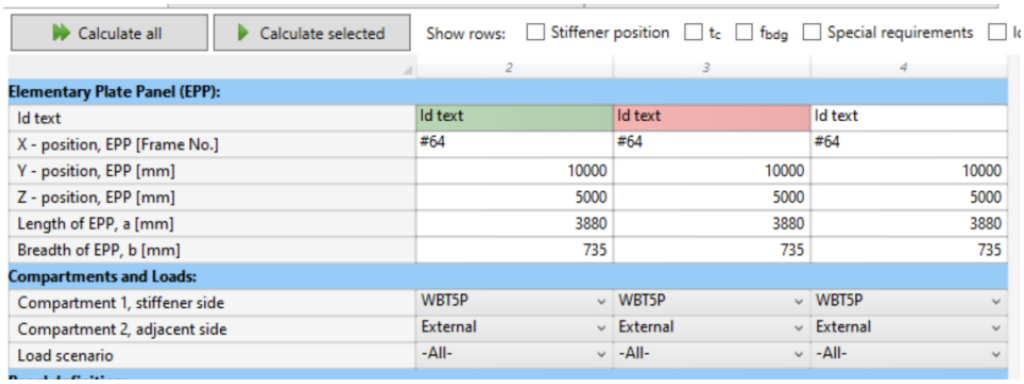
	1	2	3
Elementary Plate Panel (EPP):			
Id text	Id text	Id text	Id text
X - position, EPP [Frame No.]	#64	#64	#64
Y - position, EPP [mm]	10000	10000	10000
Z - position, EPP [mm]	5000	5000	5000
Length of EPP, a [mm]	3880	3880	3880
Breadth of EPP, b [mm]	735	735	735
Compartments and Loads:			
Compartment 1, stiffener side	WBT5P	WBT5P	WBT5P
Compartment 2, adjacent side	External	External	External
Load scenario	-All-	-All-	-All-
Panel definition:			
Structural member (level 1)	Side	Side	Side
Sub-member (level 2)	<------->	<------->	<------->
Effective hull girder structure	☑	☑	☑
Stiffening arrangement	Transverse	Transverse	Longitudinal
Panel angle to horizontal plane [deg]	90	90	90
Input Plate:			
Gross plate thk, as-built, t_{act} [mm]	30	17	17
Plate material	VL-NS	VL-NS	VL-NS
Input Stiffener:			
Select stiffener profile	WeldedAngle 800 x 200 x 14	ColvilleBulb 127 x 8.4	ColvilleBulb 127 x 8.4
Stiffener material	VL-NS	VL-NS	VL-NS
Angle between stiffener web and plate	90	90	90
Stiffener spacing, s [mm]	735	735	735
Eff. stiffener span, bend, l_{bdg} [mm]	2000	2000	2000
Eff. stiffener span, shear, l_{shr} [mm]			2000
Input Ice frame:			
Boundary condition, m0	5.7 - Continuous fram...	5 - Frames extending...	
Boundary condition, m1			11 - Frames without b...

Click here to add new column

Results (ice) Plate:			
Ice region	**Midbody Ice Belt**	**Midbody Ice Belt**	**Midbody Ice Belt**
Design ice press. for plate, P [kN/m ^{2}]	**1669,22**	**1669,22**	**1280,23**
Gross req. plate thk, $t_{ice\ gr}$ [mm]	**25,50**	**25,50**	**31,00**
Rule status	**OK**	**NOT OK**	**NOT OK**
Results (ice) Stiffener:			
Ice region	**Midbody Ice Belt**	**Midbody Ice Belt**	**Midbody Ice Belt**
Design ice press. for stiffener, P [kN/m ^{2}]	**1669,22**	**1669,22**	**726,51**
Gross off. section modulus, $Z_{ice\ gr\ off}$ [cm ^{3}]	**6825,82**	**90,43**	**90,43**
Gross req. section modulus, $Z_{ice\ gr}$ [cm ^{3}]	**490,67**	**559,37**	**309,73**
Gross off. shear area, $A_{ice\ gr\ off}$ [cm ^{2}]	**116,20**	**12,10**	**12,10**
Gross req. shear area, $A_{ice\ gr}$ [cm ^{2}]	**16,35**	**16,35**	**32,01**
Gross req. web thk, $t_{w\ ice\ gr}$ [mm]	**14,50**	**12,00**	**11,00**
Rule status	**NOT OK**	**NOT OK**	**NOT OK**

2.3.3 General improvements

The background colour of the Id text row has been updated to facilitate easier verification of the total calculation status. Upon completion of the calculation, the background color will change to green, red, or white. Green indicates that all requirements have been satisfied, red signifies that not all requirements have been met, and white denotes the absence of results.

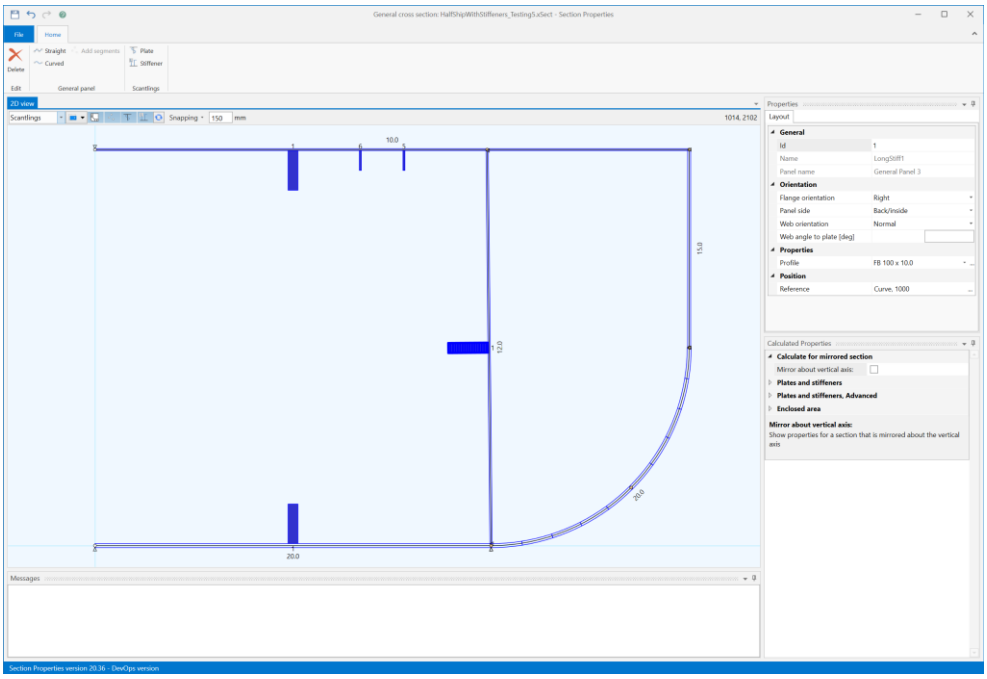


	2	3	4
Elementary Plate Panel (EPP):			
Id text	Id text	Id text	Id text
X - position, EPP [Frame No.]	#64	#64	#64
Y - position, EPP [mm]	10000	10000	10000
Z - position, EPP [mm]	5000	5000	5000
Length of EPP, a [mm]	3880	3880	3880
Breadth of EPP, b [mm]	735	735	735
Compartments and Loads:			
Compartment 1, stiffener side	WBT5P	WBT5P	WBT5P
Compartment 2, adjacent side	External	External	External
Load scenario	-All-	-All-	-All-

2.4 General cross section tool

A new tool is introduced for calculating cross sectional properties of a modelled cross section The tool is a simplified version of **Section Scantling's 2D modeller**. The User interface consists of:

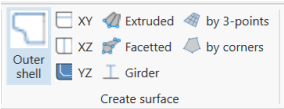
- **Modelling window**: A stripped-down version of **Section Scantling's** 2D modelling window
- **Toolbars**: Applicable modelling wizards for **General panel** and **Scantlings**, reused from **Section Scantlings**.
- **Property window**: Showing detailed properties for selected **Scantling** / **Geometry**
- **Calculated properties**: Cross-sectional properties are calculated on the fly while modelling



2.5 3D modelling

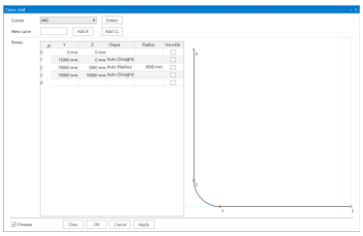
2.5.1 Outer shell

As an alternative to **import** a hull form, the user can **create** a 3D outer shell from the **Outer shell** menu:

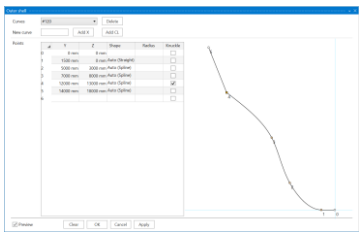


The outer shell can be created by **cross section curves** from **userspecified points**:

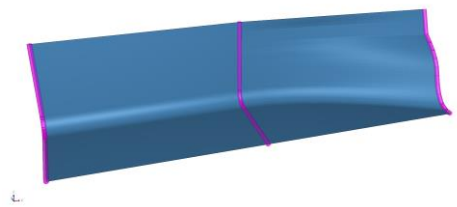
Cross section curve – midship



Cross section curve – foreship

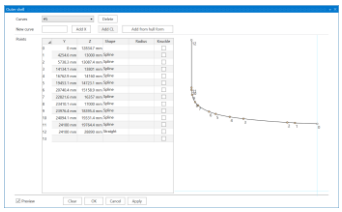


Outer shell created from 3 cross section curves

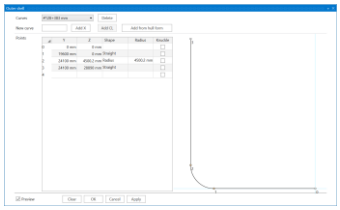


Alternatively, **Add from hull form** will automatically generate cross section curves from an imported hull form:

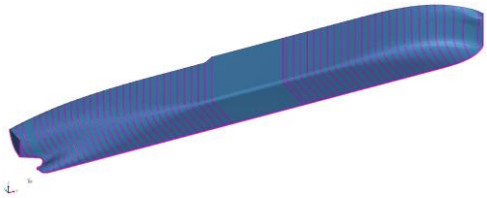
Cross section curve – aft ship



Cross section curve – midship

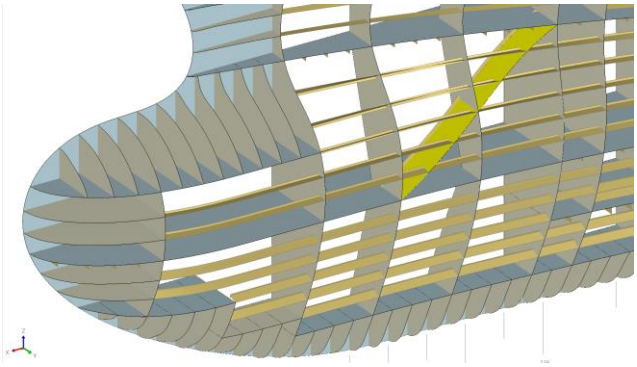


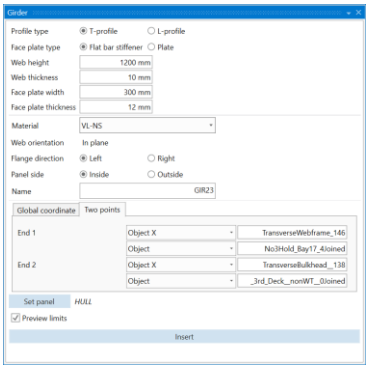
Outer shell automatically generated from imported hull form



2.5.2 Single skin girders from two points

User can now create inclined single skin girders by giving **Two points** input, like 3D Stiffener and 3D Seam.





3 ENHANCEMENTS, MODIFICATIONS AND CORRECTIONS

3.1 Enhancements and other modifications

Area	Case #	Description	ID
OCX		This version of Nauticus Hull supports the latest OCX schema version 3.1.0 and previous published schema versions. Refer to the OCX Changelog to see the changes to the schema	633427
3D Model		Compartment surface geometries are now using NURBS surfaces from the geometry model, giving a more accurate representation of the 3D compartment geometries.	673540
3D Model		When selecting scantlings in the same plane, the Copy wizard is improved, allowing for interactive clicking and mathematical expressions for longitudinal distances.	649315
3D Model		Copying of single skin girders was limited to internal planner surfaces. Now copying functionality extended to also cover copying of single skin girders on outer shell.	649207
3D Model		Wizard for adding new girders is enhanced with a new tab: Two points. Allows for e.g. creating single skin girders on outer shell that is inclined in vertical direction.	619442
3D Model		User can now create a 3D representation of outer shell by specifying a set of points.	619240
3D Model		User can now copy 3D stiffeners and 3D plate seams, similar to geometry objects and 2D stiffeners / 2D plate seams.	613934
3D Model		When creating 2D stiffeners and 2D plate seams, the program is now checking and not allowing for any overlapping scantling parts.	613930
3D Model		User can now delete different scantling types in the same operation.	564540
3D Model		When creating 3D stiffeners and 3D plate seams, the program is now checking and not allowing for any overlapping scantling parts.	561688

3D Model		When creating multiple 3D stiffeners by using the Count and spacing tab, user can now specify to include the first stiffener from the given start position.	427358
3D-Beam	00239872	For profiles with varying properties, naming of the tapered ends is changed for better understanding.	650991
Analysis Tools		In Rule Calculator's tabs for Plate and stiffeners and Pressures, for DNV Rules and CSR BC&OT, additional inputs for deck corners are added to ensure accurate green sea pressures on external decks.	656756
Analysis Tools		In Rule Calculator, background colour red / green is now introduced on the id text line, that will stay visible even when scrolling. This will give a clearer visualisation if the results are Not OK / OK.	651687
Analysis Tools		In Rule Calculator, for the pull-down menus, wheel scrolling is now supported.	642949
Analysis Tools		In Rule Calculator's Acceleration tab, when calculating accelerations according to HSLC rules, the transverse acceleration static component according to Pt.3 Ch.1 Sec.3 [2.3.2] is now included in under intermediate results.	627534
Analysis Tools		In Rule Calculator's Plate and Stiffeners tab, same cold climate requirements as in Section Scantlings are now implemented: Basic ice strengthening Pt.6 Ch.6 Sec.2 [2], Baltic ice strengthening Sec.3 [7] - [9], and Polar class Sec.7 [4] - [5].	570702
Analysis Tools		For HSLC, Excel spreadsheet that was part of NH Classic installation is now ported to NH V20.	253772
Analysis Tools		Excel spreadsheets for hold mass curves for non-CSR Bulk Carriers and Ore Carriers according to Pt.6 Ch.1 Sec.4 [5] and Sec.5 [5] now introduced.	244263
FE		For C-type tanks, the Tank Support Coupling Forces (TSCF) tool, run from GeniE's activity monitor, is enhanced to also have the capability to distribute friction forces in way of saddle supports.	662661

FE		In FE Manager, when adding deck loads, the view is improved with a vertical scroll bar, similar to when adding compartment loads, giving the user access to selecting tweendeck hatch covers.	654587
FE		For container ships, when using FE templates for automatic creation of FE loading conditions, user can now specify stack weight (as an option to weight of each container).	338442
Rules		In DNV-CG-0129 Sec.3 [4.2], mean stress effect may in some special cases be disregarded. Disregard of mean stress effect now introduced as a selection option in Section Scantlings (for longitudinal stiffeners, and plate fatigue due to lateral sea pressure) and FE Fatigue tool (for Detail 'a').	415824
Section Scantlings		For shear flow report according to HSLC Rules, results on net thickness are no longer offered, as it is not referred to in the Rules.	650722
Section Scantlings	00239361	When 'Let program detect' the equivalent deck line, the program searched for certain position codes and was not able to find trunk deck on LNG carriers. Now more generic implementation, searching for bending effective members.	650313
Section Scantlings		For northern Baltic ice strengthening requirements according to DNV Rules Pt.6 Ch.6 Sec.3, additional intermediate pressure values are included in the results grids for plates and stiffeners.	189071
Section Scantlings		User can now assign sniped ends property to transverse stiffeners, and stiffener buckling requirements will be checked (DNR Rules and CSR BC&OT).	189066

3.2 Corrections

Area	Case #	Description	ID
3D Model		If selecting e.g. a stiffener scantlings object and then switching off stiffener selection filter, the selection was no longer visible but still active. Corrected.	663946
3D Model		3D compartment volume and CoG was not the same if mirroring the model. Corrected.	663055
3D Model		3D plate seam wizard was missing the selection option 'Include start'. Now included and same behaviour as for 3D stiffener wizard.	661827
3D Model		When exporting 3D model to GeniE, performance was deteriorated in NH V20.33 January 2025. Now corrected and performance in line with NH V20.31 July 2024.	659934
3D Model		Rubber band selection for stiffeners was not working as intended if the rubber band selection spanned over more than one panel. Corrected.	658904
3D Model	00241347	When running cross section analysis of a 3D model, the required welding connection area for longitudinals was correctly calculated, but the user-defined stiffener welding lengths was not used when comparing if actual welding was OK / Not OK. Corrected.	658239
3D Model		When exporting 3D model to GeniE, floor stiffeners were not correctly connected to intersecting longitudinals. Corrected.	657048
3D Model		When mirroring a 3D model with single skin girder, it was not correctly represented on the mirrored SB side. Corrected.	656057
3D Model		3D stiffener wizard was not able to create stiffeners when both 'Distance along panel' and 'Include start' were enabled. Corrected ('Include start' is now hidden when 'Distance along panel' is ticked).	655995
3D Model		Export of 3D model to GeniE is improved, allowing for outer shell with pontoon above the waterline.	655771

3D Model		When adding a bilge transverse single skin girder using the single skin girder wizard, the girder was wrongly represented. Corrected.	655573
3D Model		For a 3D model with colour coding of position codes activated, if adding a new geometry object with a new position code, the colour coding was not correctly updated. Corrected.	654507
3D Model		For a 3D model of a Multi-Purpose Vessel (MPV) with slanted hopper tank in the aft parts of the long centre hold, compartmentation failed. Corrected.	640158
3D Model		Export of 3D model to GeniE is improved, allowing for outer shell with varying height.	640148
3D Model		When adding single skin girder with face plate represented as plate (and not stiffener), the face plate was not correctly trimmed against other single skin girders with face plate represented as stiffener. Corrected.	634902
3D Model		When copying geometries, the water tight property was lost for the copied objects. Corrected.	634702
3D Model		When deleting a panel with a single skin girder, the single skin girder would not be deleted if it was a copied object. Corrected.	632947
3D Model		Multiple deletion of plates was not working in the 2D cross section preview. Corrected.	629899
3D Model		When exporting 3D model to GeniE, single skin girders attached to outer shell was not correctly exported. Corrected.	626545
3D Model		Journaling of commands for explode/split multiple surfaces was wrong. Corrected.	625551
3D Model		When exporting 3D model from Nauticus Hull to GeniE, outer shell shape for non-prismatic area was not correctly represented. Corrected.	621221
3D Model		When trying to export a 3D model with overlapping scantlings to GeniE, the export terminated without proper error messages. Now NH is searching for overlapping scantlings during export to GeniE, and only the larger scantling will be exported, with proper warning messages.	613122

3D Model		Display of plate seams on outer shell was not working as intended when adding 3D stiffeners. Corrected.	612476
3D Model		When using the Girder wizard to create a single skin T-profile girder, with face plate represented as flat bar stiffener, two stiffeners were created (one on each side of the girder web). Now corrected to be only one flat bar stiffener.	611324
3D Model		If hiding outer shell plate seams, the hidden plate seams wrongly re-appeared after adding new objects. Corrected.	608891
3D Model		Rubberband selection of plates, in combination with other scantling types, was not working. Corrected.	584425
3D-Beam		When creating profile type 'Bulb profile with double plate' it was by mistake saved as profile type 'Bulb profile with reinforced T'. Corrected.	650372
3D-Beam		Cancel button is removed from the Loadcase Manager wizard, as it was not working as intended. User can now undo/redo changes after closing the wizard by using the general undo/redo commands on the File toolbar.	629842
3D-Beam	00251334	For T-profiles and L-profiles not normal to attached plate flange, the section modulus was not giving consistent values. Corrected.	677250
Analysis Tools	00247876	In Rule Calculator's Corrugated Bulkhead tab, for DNV Rules, warning was not given if calculation position was outside of compartment boundary (mapping failed). Tool tip descriptions for 'Corrugation is in compression' and '(Optional) Normal stress to the flange' have also been improved.	669042
Analysis Tools		In Rule Calculator's Corrugated Bulkhead tab according to DNV Rules, the calculations were wrongly using pressure from one compartment only. Now corrected to analyse pressures from both sides.	667485

Analysis Tools		In Rule Calculator's Plate and Stiffeners tab, for CSR BC&OT Rules, when attempting to carry out rule calculations for deckhouse, a misleading warning message was given. Now corrected and informing the user that deckhouse and superstructure rule checks are covered by a separate Excel spreadsheet.	664560
Analysis Tools		In Rule Calculator, Copy / Paste of rows were not working as intended for all tabs. Corrected.	664558
Analysis Tools		Hold mass curves according to CSR BC&OT, for BC-B with No MP, the maximum permissible mass (sea) curve for single hold was not according to Rules. Corrected.	659460
Analysis Tools		In Rule Calculator's Plate and stiffeners tab, when determining the corrosion additions according to DNV Rules Pt.3 Ch.3 Sec.3 Table 1, the vertical extension of 'lower part' for 'Dry bulk, container and general cargo holds' was wrongly calculated. Corrected.	655900
Analysis Tools		In Rule Calculator's Plate and stiffeners tab, Uniform Distributed Loads (UDL) was wrongly not applied to position code Inner Bottom. Corrected.	652681
Analysis Tools		In Nauticus Hull's Rudder tool, undo/redo was not working as intended. Corrected.	630035
Analysis Tools		In Rule Calculator, for transverse stiffeners in the Plate and stiffener tab, when calculating the effective plate flange width, 'l_bdg' instead of 'Length of EPP, a' was used. Corrected.	620823
Analysis Tools	394425	In Rule Calculator' Plates and stiffener tab, when determining the corrosion addition for DNV Rules according to Pt.3 Ch.3 Sec.3 Table 1, the program was not able to detect 'Upper surface of decks or bottom plate of the compartment' for compartment types 'Void, dry spaces and compartment types not mentioned above'. Corrected.	343693
Analysis Tools	328063	For DNV Rule checks of Transom in Transverse Bulkheads or Rule Calculator, the minimum plate thickness according to Pt.3 Ch.6 Sec.3 Table 1 was wrongly implemented. Now corrected and using minimum thickness requirement as for side shell.	244733

Analysis Tools	308889	In Rule Calculator's Trv. Corrugated Bulkhead tab according to CSR BC&OT, the calculated required thickness was correctly rounded off to closest 0.5 mm thickness, but the OK/Not OK summary result was not. Corrected.	177070
Analysis Tools		In Rule Calculator's Corrugated Bulkhead tab, for DNV Rules, rule status for yielding showed OK even if calculation failed (e.g. to unmapped compartments). Corrected.	136185
FE		When running Local Model Load Applier (LMLA) tool as part of GeniE's activity Monitor, the performance deteriorated for each load case and performance became poor when mapping from global result files with several load cases. Corrected.	665826
FE		In FE manager, the FE load template for MPVs assigned bulk loads to wrong compartment, due to wrongly generated 3D compartments. Corrected.	659612
FE		After installing a new version of GeniE, it was not automatically recognised as the default program version when exporting RuleLoads.xml file from NH to GeniE. Corrected.	658283
FE	00242140	When running Local Model Load Applier (LMLA) tool as part of GeniE's activity Monitor, false warning messages was reported in the log file for vertical wooden supports of independent prismatic tanks, with ULS loads. Corrected.	657163
FE	00230843	In FE manager, FE load template for ore carrier aftmost cargo hold according to DNV Rules Pt.6 Ch.1 Sec.5 Table 9, heavy ballast conditions used default GM values and kr values for normal ballast conditions and vice versa. Corrected.	633311
FE	383602	In FE manager, when using the FE template to create standard load cases for independent prismatic tanks (Type A and B), the user-specified design over pressure in the template was not used when automatically creating the load cases. Corrected.	328338

FE		In FE manager, for fatigue load template for CSR bulk carriers, the calculated density used M_full instead of M_h (but total load form bulk cargo was correct). Now updated so calculated density for fatigue assessments is according to CSR BC&OT.	92197
FE	00254577	If exploring FE loading conditions from FE manager via RuleLoads.XML file with lower case letters, and re-name in GeniE with upper case letters, Hull Girder Load Adjuster (HGLA) will return an error message. Now HGLA corrected not to be upper / lower cases sensitive.	684196
Libraries		If creating a new material in NH's Material Library, the newly created material was not available in the Material Library's drop-down menu for 'Selection criteria'. Corrected.	657555
Libraries		When duplicating a Section Scantlings cross section, with shear connections defined, the shear connections are also duplicated in the Shear Connection Library. Corrected now so duplicated cross sections will refer to same Shear Connections in the Profile library.	642916
Libraries		In the end connection libraries, the rule defined stress concentration factors were not automatically updated when changing rule edition. Corrected.	92286
Rules\CSR	289876	Materials VL-47 and VL-40FA are removed from CSR BC&OT (but still available for DNV Rules), as they are not referred to in CSR BC&OT.	136720
Rules\DNV		For DNV Rules, a correction to bow impact zone was introduced in NH V20.33 January 2025, that is now further enhanced: Bow impact pressures will not be calculated above Forecastle deck. But if no Forecastle deck, then bow impact pressures will be calculated to side also above freeboard deck.	670987

Rules\DNV		Corrugated bulkheads in Section Scantlings according to DNV Rules, for minimum thickness requirements and slenderness requirements, the actual thickness was determined as the minimum gross plate thickness along the EPP. Now corrected to be same as for yielding requirements: Actual gross thickness is not minimum of the plates on the EPP, but actual assigned plate thickness.	373347
Rules\DNV		For DNV Rules, the ship type requirement for Standby vessels according to Pt.5 Ch.9 Sec.4 [2.1.4] was only implemented for port side. Now corrected to also be correct for starboard side (with negative y-coordinates).	307210
Rules\DNV	223785	For DNV Rules, Minimum plate thickness was not correctly calculated for compartment type 'Tank for RSW'. Now corrected and minimum thickness calculated according to DNV Rules Pt.3 Ch.6 Sec.3 Table 1 'Bulkheads for cargo tanks, water ballast and hold intended for cargo in bulk'.	92352
Rules\DNV	00253859	Minimum thickness of double bottom centre line girders for container ships according to DNV Rules Pt.5 Ch.2 Sec.5 [4.1.2] is now corrected to be according to latest Rule edition.	681454
Section Scantlings	00247504	In Section Scantlings, for RU-HSLC / RU-NAV, YZ-grid and wizard for creation of outer shell geometry was not working. Corrected.	667725
Section Scantlings	00243302	In Section Scantlings, for DNV Rules, when the program is to detect material strength for bottom zone / equivalent deck line, members within the zone with ReH less than 265 N/mm2 was not checked to determine the bottom / equivalent deck line zone's material strength. Corrected.	658906
Section Scantlings		Dividing segments by 'Split at Y/Z' was only available once (greyed out if trying to divide one more time). Corrected.	657176

Section Scantlings		In Section Scantlings and Transverse Bulkheads, stiffener result grids MinY and MinZ was defined as start point and MaxY and MaxZ was defined as end point. Now corrected so the start point and endpoint will have correct pair of coordinates, ensuing a correct stiffener layout if copying to 3D Beam.	653524
Section Scantlings		For DNV Rules, results in results grid Vertical Hull Girder Bending Strength were in a special case due to a tolerance issue not correctly aggregated to the results grid for Hull Girder Strength. Corrected.	648684
Section Scantlings		If inner bottom was not assigned correct position code, the minimum longitudinal girder thickness for Container Ships according to DNV Rules Pt.5 Ch.2 Sec.5 [4.1.2\] and [4.1.3] gave wrong requirements with no warning message. Now corrected to provide a warning message if no inner bottom is defined.	647335
Section Scantlings	00238049	The application of special plate yielding requirement to curved bilge plating according to DNV Pt.3 Ch.6 Sec.4 [2.1.2] and CSR BC&OT Pt.1 Ch.6 Sec.4 [2.2.2] b), has been improved when the bilge consists of multiple spline segments with varying radius.	647011
Section Scantlings		When running cross section analysis according to Naval Rules, no model parts slightly below z = 0 was tolerated (program returned error message). Now, the program accepts some spline curve parts slightly below z = 0.	646423
Section Scantlings	00231513	For RU-HSLC, the critical compressive buckling stress according to Pt.3 Ch.3 Sec.11 [1.1.2] was wrongly implemented when sigma_el is less than yield/2. Corrected.	635593
Section Scantlings		When creating longitudinal stiffeners by using the YZ grid tab, inserting was not allowed if inconsistent inputs was given in the Wizard tab. Now corrected so the insert by using the YZ grid tab is not influenced by the Wizard tab.	626889

Section Scantlings		For Naval Rules, EPP results for plate slenderness requirements were missing. Corrected.	603446
Section Scantlings		For a Cross Section in Section Scantlings with no high tensile steel, for DNV Rules, when enabling 'Let program detect HT-steel zone height' the program attempted to calculate required extension of high tensile steel and returned unreasonable warning messages. Corrected now so for a cross section with no high tensile steel, no attempt is made to calculate a required extension of high tensile steel.	576885
Section Scantlings		For cross section according to DNV rules that is not ticked off as 'midship cross section', not applicable minimum hull girder strength requirements were wrongly marked as red in the results grid. Corrected and the N/A minimum hull girder strength requirements are now marked as white cells in the results grid.	554608
Section Scantlings		Section Scantlings returned an error message if longitudinal girders had start and end y-coordinates that were not exactly the same. Now corrected, allowing for a small deviation in nodes' y-coordinates (allowing for small modelling inaccuracies).	537544
Section Scantlings		For minimum keel plate thickness according to DNV Rules Pt.3 Ch.6 Sec.3 Table 1, if an EPP had a plate seam, it would use the lesser plate thickness outside of the required width of the keel plate. Corrected.	218788
Section Scantlings	273391	For corrugated bulkheads according to DNV Rules, shear buckling case 11 was wrongly used. Now corrected to use buckling case 15, according to CG-0128 Sec.3 [3.4].	94277

Section Scantlings		In Section Scantlings using DNV Rules, for fatigue assessment of longitudinal flat bar stiffener end connection, the stress concentration factor shall be increased by a factor 1.12 if clearance between the edge of the flat bar stiffener and the attachment is less than 8 mm, ref. DNV CG-0129 App.A [2.1]. This was not included and is now corrected.	92349
Section Scantlings		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.	677880
Ship Data		When using an imported 3D hull form to calculate ice class parameters, such as parallel mid-ship and angle at B/4, a too strict tolerance was set when comparing the bounding box of the 3D hull form with AP and FP defined in Ship Data. Corrected.	644232
Ship Data	00231008	Even if values for 'Deepest equilibrium waterline in damaged condition' was specified under Main structural arrangement, false warning message was given when creating flooded loading conditions. Now corrected so when running Section Scantlings / Transverse Bulkheads, the analysis will only give warning messages if inputs are missing.	634019
Ship Data		Under Ship Data, when adding steel coil loads, no error message was given for negative input values. Corrected.	92544
Ship Data		If X-Carrier or Ore Carrier was defined in Ship Data, inputs for Steel Coil Loads was wrongly available. Corrected.	92341
Transverse Bulkhead		The method used for finding deck corner is improved to be in line with Section Scantlings.	628903
Workspace	00238211	When creating new Section Scantlings or Transverse Bulkhead files with the reserved name 'New', modelling was not allowed, and no clear error message was given. Now corrected so if the user attempts to create a new file with a reserved name, it will automatically be assigned an extension '_' in the scriptable name.	647591

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/

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.