LUSAS 19.0 Error Fix and Modification Release Notes

This document lists modifications, other than the New Features in 19.0, that have been made since LUSAS 18.1-1 and is correct as of 17th July 2020.

Version 19.0-2 Built 16th July 2020

No changes to Modeller (34838)

LUSAS Solver 19.0-2 (7002)

Errors fixed

The following critical, major or minor issues are fixed in V19.0-2.

Enable displacement reset for joint model 35 (27677)
Heat of hydration results for adiabatic conditions - results do not match CIRIA results when additions are included in concrete mixture (27663)
Warning message has been added to v19 for CEB-FIB and Eurocode when stress exceeds 0.65 fck(t0) with Creep (26848)

Version 19.0-1 Built 3rd July 2020

LUSAS Modeller 19.0-1 (34838)

Errors fixed

The following critical, major or minor issues are fixed in V19.0-1.

Crash attempting to taper sections without the csv section definition files being available (27520)
Composite failure strength shows wrong unit in unit converter (27503)
Cannot add Temperature Dependence to material which has Ko initialisation (27479)
When the active loadcase is a combination which contains loadcases from analyses with different sections assigned, contours of stress should be disallowed, but is sometimes incorrectly allowed (27473)
Some section properties may be incorrect where a gap is involved (e.g. Back to back sections) (27459)
Adding a saved view or a graph to a report can use the wrong primary component (27450)
User defined results can give spurious errors in birth and death model (27438)
Standard library beam properties give non-positive plastic area error from Solver (27436)
Deleting an analysis in a prestress model takes a very long time (long enough that user may think it has crashed) (27433)
The check for consistency between 'Cured concrete' checkbox in 'Initial conditions' and 'concrete Heat of Hydration' in the Hygro-thermal material properties dialog should not be done for bar elements (since they cannot have a hygro-thermal material) (27404)

Temperature dependent properties dialog has duplicate Young's Modulus inputs (27395)

Slice Resultants should be allowed in LT (27387)

Original model geometry merge status lost when using Model Merge (27379)

Early-age Hygro-Thermal Cracking of a Concrete Dam - cannot build a model from a script (27354)

Geometric attribute for plane strain beam not available in coupled analysis (27272)

Cannot create a loadcase for smart combination result (27230)

Error message 'curve ID not found', when viewing a graph, after changing the properties (e.g. Axes labels), when the graph includes another graph (27207)

Manually switching on a restart can cause the error message 'xxx.rst does not contain the restart required...' in subsequent analyses (27191)

Meshing can create TSR6L elements, which are not in the element reference manual, and do not work with linear isotropic material (27179)

Error message that joint material properties are not in ascending displacement order (27173)

Unexpected error code C0000005 when importing a particular .stp file (27152)

Changes to area reduction factor (in Distributed to Perimeter loading) are ignored by Modeller. (27149)

TLO: JTG D60-2015 impact allowance isn't used (27147)

Temperature cannot be plotted on thermal bars in hygro analysis (27136)

Temperature dependence doesn't work correctly with orthotropic materials (27131)

TLO: AS5100-7 (Austroads) seems to give T44/L44 answer in preference to more onerous HLP alternative (27130)

It can be confusing that the assignment editor defaults to the first assignment, rather than the selected assignment (27127)

It shouldn't be possible to create two loadcases with same name (27125)

Inserting a new loadcase doesn't update the restart or initial deformations of dependent analyses (27123)

It should be possible to use JNT4 with thick shells (27122)

System error from SEQUIV when post-processing membrane forces (27081)

Option 64 should not be tabulated if eigenvalue or buckling controls are present (27033)

Relieving axles should not be neglected in CS454 (27015)

Wrong geometric properties can be tabulated when multiple varying section is used with mixed materials (27014)

Spurious popup about available components when setting active an envelope with Wood Armer Nx(T) (26994)

When a copy is made of an analysis, and there are prescribed loads in the base analysis, the automatic support is not tabulated - leading to zero stresses and warnings from Solver that PDSP has been assigned to unrestrained nodal freedoms (26977)

Pasting a selection of multiple attributes into the group treeview doesn't assign the attributes, and so should not be allowed (26908)

Unable to connect with LPI from an external program (26902)

UDR variables with a short name (like 'b') can confuse the Print Results Wizard - and no results are shown (26896)

Stress on eccentric thin beam elements is incorrect (26873)

Beam/Shell slicing doesn't accept imperial units notation for length (26844)
Modeller goes into an infinite loop remeshing a few selected surfaces (in a model that contains graphs) (26838)
Solid shear stress - spherical coordinate should provide Spr (26813)
Contours of displacement should not be drawn for GRIL, BMS3 and BTS3, or when 'internal beam deformations' option is turned off (26809)
The pressure freedom should be available for lift off, just like other freedoms (26808)
When dragging a loadcase down the tree (to give it a higher number), it gets placed one position too far down (26804)
Incorrect units for PRW for RC Slab Designer (26785)
It should not be possible to delete assignments from VLO loadcase (26776)
JF3 joint element in rigid end zone can give errors in geometric properties tabulation (26761)
Error message if automatic gravity is used with rigid end zone joint elements (26757)
DMI for grillage averaging (MF Longitudinal) is not shown in the Influence dialog in RLO (26756)
It is sometimes possible to get a duplicate mesh which can neither be deleted nor deassigned (26747)
Crash when enveloping on a nodal user defined result entity (26741)
Transformation setting on contours / values should not be available when an RC Design loadcase is active (26735)
Prescribed acceleration dialog not displaying attribute data correctly (26730)
Spring stiffness values incorrectly tabulate per node (rather than per unit length of line) if local coordinate assigned to parent surface (26695)
Graph Through 2D is returning incorrect resultants for plane stress models that have a varying thickness (26655)
Restart works for 1 loadcurve but not for 3 loadcurves (26644)
Internal beam deformation is unreasonable and diverts from nodal values (26640)
Restart analysis with transient control requires OPTION 18 (fine integration) to be set in the preceding analysis (26624)
A surface boundary variation defined by line variations with steps does not give a stepped variation in element thickness, get a taper instead (26616)
Deformed beam mesh shows unreasonable 'jumps' at one end of each element (26608)
Reference path can crash software if too many facets are chosen (26571)
Updating prestress loading (Solve now dialog) should force a subsequent save of the model (26553)
Prestress to JTG D62-2004 - 'Non-prestressed reinforcement area' input causes unusual losses (26376)
VLO - JTG D60-2015 - Remove choices for shear and 'other' factoring; automatically apply factors (26340)
VLO - JTG D60-2015: Do not mix vehicle loads and lane loads in one load pattern. (26339)
Line variation with actual distance applies loading equivalent to 1m, when it should be per unit length (26247)
Some inappropriate two-phase components are offered for post-processing. (26225)
Options specified on the various control dialogs (e.g. P-delta) are saved by the program on a 'per model' basis, when they should be saved 'per analysis' (26223)

If an attribute is imported from a library, and has dependencies (e.g. Variations) which have names that clash with attributes / utilities that already exist in the model, the attribute is created referencing the variation from the model, instead of the variation from the library. (26002)
Exporting design utilities (via import/export model data) sometimes fails (25994)
When working with European decimal character, there can be a crash in ASPC when a section is added to library (25985)
'Inactive for loadcase of interest' message popping up when updating prestress loading (25866)
'Object reference not set to an instance of an object' error message from beam / shell slicing calculation (25807)
Eigenvalue frequency analysis does not ignore body force gravity loading when the 'Convert assigned loading to mass' option is used (25805)
A local distributed load, using a variation and cylindrical coordinates is not tabulated correctly (25692)
Cannot use hexahedral mesh on volume created by sweeping (25679)
Cannot merge loads under corresponding loadcases using Model merge option (25648)
Merging models that contain prestress loads can cause a crash (25647)
If a shell surface is an angle, there is no way to slice in the plane of the shell (25593)
BMX elements cannot be used with certain sections from library (25580)
VLO - most onerous loading pattern not generated for all influence attributes (25325)
Using the 'Enter Properties' option in the Enter Section dialog within the Multiple Varying Section dialog results in the sectional properties not being saved (25282)
Our library of 'SHS (EN10210)' sections includes 'Jumbo' sections which are not included in the BS EN 10210 specification. (25132)
Slice utilities (and composite beams) cannot be used in library import/export (25123)
Setting a non-zero value for MXRHS can overcome memory limitations experienced by Solver (24882)
Out-of-date results remain available when prestress loss calculation fails and the second tabulation fails (24446)
Slideline contact status is incorrectly reported as zero everywhere when results file is loaded on top of the model (22992)
Slice resultants beams/shells: Slice coincident with a node can lead to unexpected results (22774)
Slice resultants should be recomputed after any change to defining lines (20464)
Graph Wizard - Sum of reaction or loading for all nodes takes an excessive amount of time for moderate to large sized models (18402)

A number of fixes for cosmetic issues, documentation issues, installation issues, and development requests are also provided in V19.0-1. Users with a reference number provided by LUSAS Customer Support may identify these from the following list:

27615, 27556, 27554, 27546, 27531, 27524, 27498, 27488, 27467, 27455, 27431, 27420, 27414, 27408, 27401, 27396, 27360, 27342, 27332, 27316, 27303, 27270, 27256, 27237, 27232, 27225, 27203, 27200, 27186, 27181, 27171, 27168, 27167, 27157, 27126, 27115, 27087, 27059, 27058, 27049, 27032, 27030, 27027, 27023, 27020, 27017, 26995, 26990, 26989, 26987, 26986, 26979, 26968, 26965, 26958, 26949, 26944, 26934, 26921, 26916, 26901, 26898, 26879, 26870, 26865, 26860, 26849, 26847, 26837, 26818, 26773, 26772, 26746, 26744, 26738, 26736, 26728, 26701, 26697, 26696, 26672, 26638, 26578, 26570, 26569, 26559, 26558, 26556, 26545, 26541, 26538, 26537, 26526, 26502, 26498, 26497, 26464, 26460, 26459, 26435, 26425, 26418, 26411, 26406,

26392, 26384, 26377, 26357, 26336, 26335, 26330, 26317, 26312, 26305, 26279, 26268, 26227, 26224, 26218, 26199, 26183, 26177, 26163, 26080, 26074, 26073, 26059, 26051, 26016, 25935, 25921, 25915, 25896, 25884, 25871, 25855, 25833, 25820, 25800, 25795, 25784, 25777, 25771, 25732, 25703, 25668, 25595, 25581, 25573, 25537, 25530, 25493, 25452, 25450, 25442, 25424, 25400, 25380, 25332, 25326, 25313, 25291, 25276, 25257, 25247, 25234, 25171, 25160, 25140, 24917, 24826, 24824, 24765, 24551, 24550, 24427, 24283, 23909, 23844, 23772, 23730, 23680, 23666, 23657, 23629, 23600, 23302, 23177, 23145, 23144, 23065, 23063, 22909, 22728, 22673, 22623, 22622, 22618, 22437, 21907, 21557, 21368, 21365, 20683, 20589, 20316, 20181, 19998, 19891, 19725, 19698, 19143, 18579, 16956, 16954, 16308, 15859, 14978, 14874, 14838, 14010, 13976, 12916, 12235, 11720, 11500, 3094

LUSAS Solver 19.0-1 (6977)

Errors fixed

The following critical, major or minor issues are fixed in V19.0-1.

'Negative warping constant' warning from Solver when no warping requested (27442)
Joints not activated correctly - Need to be activated at the current nodal location (not the initial position) (27365)
deformed shape is not shown properly for perimeter loading (27346)
Small fictitious residual forces sometimes occur in a nonlinear analysis when the 'improved transverse shear for thick shells' option is used (OPTION 396) (27313)
Thermal strains are not processed correctly when applied to thick shells when the initial nodal plane for a single element is a curved surface (applies to TTS6/QTS8) (27276)
Duncan-Chang model with two phase elements is not available (27235)
Restart doesn't work due to 'insufficient memory to evaluate automatic slideline' (27209)
Compressive strength and E value the same for the first and second time step - concrete material model 109 (27121)
Displacement reset does not work correctly with spring supports (26805)
Piecewise linear elastic (axial force dependant) - does not switch curves when normal direction is different from x (26767)
Unclear warning message when support conditions are automatically set to free (closed) for an undrained solution with a two-phase material. (26424)
'Exponent for increasing time step' does not work with concrete model 109 (26369)
An explicit dynamics 2D problem fails with a system error (26212)
Pipeline elements should not be in LT versions? (26186)
Slidelines cannot be used with QTS8 elements (26084)
Line mass elements (LMS3 and LMS4) give pivot error with subspace Jacobi solver. (24400)
Viscosity coefficient damping prevails over damping attribute (22455)
In models with a huge number of constraint equations the Pardiso solver fails to solve, issuing an error that the displacements are invalid (20883)