

MODEL CHECKS & SIZING MESSAGES







MODEL CHECKS

| Ελεγχοι Μοντέλου | | × |
|------------------|--------|--------|
| Ελεγχοι Μοντέλου | | \sim |
| ОК | Cancel | |

| NUMBER | REASONS | | |
|-----------|---|--|--|
| error1001 | The mathematical model of the vector has not been created or the member of the given beam has been deleted. | | |
| Error1002 | The mathematical model of the vector has not been created or the member of the given pole has been deleted. | | |
| Error1003 | The start and/or end node does not exist (may have been deleted). The member must be re-entered. | | |
| Error3001 | Warning for loads placed from bottom to top. If they are intentionally inserted in this way, the message is ignored. | | |
| error3002 | Warning message for members that have not received loads from plate reactions even though there are plate or plates that have that member as a limit. | | |
| Error3003 | There is a general problem with this particular plate. It needs to deleted and re-inserted. | | |
| Error1678 | The correct positioning direction of the poles is always from the bottom to top. The message means that the pole is positioned in the top-down direction. The error can be corrected by swapping the start and end nodes (the start node becomes the end node and the end node becomes the start node) of the pole bar. | | |
| Error3013 | The correct positioning direction of the beams is from left to right and from top to bottom. For the poles the correct direction is from bottom to top. The message comes out when some elements are not placed according to the above convention. The message is corrected by using the "Redefine Face" command. | | |
| Error1008 | At the junction number located at level there is no no member and obviously has no reason to exist and should be | | |



| | deleted. The model calculation as well as its update automatically deletes these disconnected nodes. | | |
|-----------|---|--|--|
| Error1003 | It means that the beam starts and ends at the same node. This is wrong and the beam should be deleted and reinserted. | | |
| Error1003 | The start and/or end node does not exist (may have been deleted). The member must be re-entered. | | |
| Error1003 | The message appears when the beam member is below 10 cm. It is advisable to avoid such members in the carrier. | | |
| Error1004 | The message appears when the pole member is below 10 cm. It is advisable to avoid such members in the carrier. | | |
| Error1004 | It means that the pole starts and ends at the same node. This is wrong and the pole should be deleted and reinserted. | | |
| Error1005 | There are members with the same number. The renumber members command must be used to correct the problem. | | |
| Error1006 | The two members have the same start and end node. It is not necessarily wrong because it is possible that there are elements (e.g. beams) at the ends of two opposite walls. But it is also possible that the same member has been inserted twice by mistake. | | |
| Error1007 | There are members with the same number. The renumber members command must be used to correct the problem. | | |
| Error1007 | The two nodes coincide which can happen in the case of e.g. a perfectly symmetric building where the diaphragm node can coincide with a column node. In general, however, it is wrong and must be considered on a case-by-case basis | | |
| Error1008 | The message is about a node that depends on a buffer node that has a problem (has been deleted or did not exist in the first place) | | |
| Error1009 | The message is about a node that has a problem (has been deleted or did not exist in the first place) | | |
| error1010 | The message is about a node that has a problem (has been deleted or did not exist in the first place) | | |
| Error1011 | The message is about a node that has a problem (has been deleted or did not exist in the first place) | | |



| Error1012 | The message is about a node that has a problem (has been deleted or did not exist in the first place) | | |
|-----------|---|--|--|
| Error1013 | The correct degrees of freedom of the pediment's origin node are P(edge) - E(edge) - P(edge) - E(edge) - E(edge) - E(edge) - E(edge). The message appears when one or more degrees of freedom is something other than the above. | | |
| Error1014 | The correct degrees of freedom of the end node of the pediment are P(edge) - E(free) - P(edge) - E(free) - P(edge) - E(free). The message appears when one or more degrees of freedom is something other than the above. | | |
| Error1015 | The specific property or properties of the beam is wrong. By displaying the properties, the incorrect property can be identified. | | |
| Error1016 | The specific property or properties of the pole is wrong. By referring to the properties, the incorrect property can be identified. | | |
| Error1017 | This end of the beam is not connected to any other member of the carrier. If it has been inserted as a furrow the message is ignored, otherwise it must be examined because it is not connected to either another beam or a post. | | |
| Error1017 | This message means that the beam as a physical cross-section is not connected to a column but its mathematical member is connected to another mathematical member as in the case of indirect support. So it is not an error in this case but in general it should be checked on a case by case basis. | | |
| Error1018 | The beam is not connected either at the beginning or at the end with other linear members of the beam. It must be considered on a case-by- case basis because it is wrong to be completely unconnected but there is also the possibility that it is connected at surface nodes. | | |
| Error1019 | The post is not connected either at the beginning or at the end with other linear members of the carrier. The message must be considered on a case-by-case basis because it is wrong to be completely disconnected but there is also the possibility that it is connected to surface nodes. | | |
| Error1020 | The correct degrees of freedom of the node of the pediment are P(edge) - E(greedy) - P(edge) - E(greedy) - P(edge) - E(greedy) - E(greedy). The message appears when one or more degrees of freedom is something other than the above. | | |



| error1021 | The physical cross-section of the post in which the petal was placed has a problem (probably it was erased afterwards without erasing the petal or the correct insertion was not done from the beginning) |
|-----------|--|
| error1022 | When a pedicle is inserted into a natural post cross-section, this cross- section is internally connected to the pedicle. When this connection for some reason is not made correctly in the first place or is subsequently lost, there is a problem and the penetrate must be deleted and reinserted. |
| error1024 | New control warning message when for a member, the value of the elasticity modulus has been given less than the value of the shear modulus. |
| error1301 | By definition, the columns are considered the only vertical elements and the beams all the rest. So when the above message appears, it means either that a beam cross-section was initially selected by mistake when inserting a column, or that the beam was subsequently rotated and came to a vertical position. In the first case the member must deleted and re-inserted, while in the second case there is no problem. |
| error1301 | This particular member of the post has large rigid sections at its ends, the remaining elastic length is very short. |
| Error1023 | All the elements of the operator when they are imported are assigned to one of the levels of the building. This message means that the start node and/or the end node of the pole do not belong to any of the levels defined, i.e. the elevation of these nodes is not the same as any of the station elevations, nor does it belong to the +/- range of elevations. The problem is addressed by examining the nodes on a case-by-case basis. |
| Error1023 | All the elements of the operator when they are imported are assigned to one of the levels of the building. This message means that the start node and/or the end node of the beam do not belong to any of the levels defined, i.e. the elevation of these nodes is not the same as any of the station elevations, nor does it belong to the +/- range of elevations. The problem is addressed by examining the nodes on a case- by-case basis. |
| error1049 | Warning message when surface elements have been placed at level 0 and are not defined as surface elements on elastic ground. |



| Error1009 | This message appears when the degrees of freedom of a node are manually configured beyond the usual cases (all tucked, all free, elastic supports, etc.). It is a warning and is intended to prevent a possible error. |
|-----------|---|
| Error1017 | This end of the member is not connected to any other member of the carrier. If it is inserted as a furrow, the message is ignored, otherwise it must be examined because it is not connected to either another beam or post. |
| Error1017 | This end of the member is not connected to any other member of the carrier. If it is inserted as a furrow, the message is ignored, otherwise it must be examined because it is not connected to either another beam or post. |
| Error1007 | The start node and the end node of Truss members shall not depend on a baffle node. They shall detach from the baffle node. |
| error2006 | One of the elements (beams, lines, etc.) that define the contour - boundaries of the plate has a problem, i.e. it may have been erased afterwards or not inserted correctly from the beginning. |
| Error2001 | The numbering of the plates must be unique per level. By commanding either automatic or manual renumbering the problem is solved. |
| Error2002 | The slab was automatically identified initially but its name includes an English question mark (?) which means that it needs the modelling process. The message therefore appears when this modelling has not been done. |
| Error2003 | It must be done, using the corresponding command, Side Match for the specific plate. |
| Error2003 | It must be done, using the corresponding command, Side Match for the specific plate. |
| error2004 | In addition to the obvious message above, the plaque symbol is coloured red. Eliminating the message and the red colour can be done either by using the automatic thickness calculation command, or by manually entering a desired thickness. |
| error2005 | The message is about Zoellner plates where there are 3 thicknesses in introduction. The thickness of the upper plate the thickness of the lower plate (which can be 0) and the total thickness including the two previous thicknesses and the intermediate thickness with the gaps. It cannot |



| | so the total thickness should be less than the sum of the upper and lower parts. Correcting this thickness eliminates the message. |
|-------------|---|
| warning4001 | Member (1) has release of all principle-end moments and warns the user about members with this condition. |
| warning4002 | Check the degrees of freedom of the members coinciding in node (11031)(2). In this node all the members that coincide have the above condition and this node does not belongs to a surface node |
| Error4008 | State 7 of Column 1 has a zero value in some dimension |
| error4114 | When finite surface elements on elastic ground (OEF) are defined and the spring constant is not defined, an error message is displayed for the surface nodes. |

GEOMETRIC REQUIREMENTS CONTROL MESSAGES

| Ελεγχοι Μοντέλου | | × |
|--|---|---|
| Ελεγχος γεωμετρικών διαστάσεων ΕΚΩΣ | | ~ |
| Έλεγχοι Μοντέλου Έλεγχος γεωμετρικών διαστάσεων ΕΚΩΣ | | |
| Έλεγχος γεωμετρικών διαστάσεων EC2-EC8 ΚΠΜ Έλεγχος γεωμετρικών διαστάσεων EC2-EC8 ΚΠΥ | 6 | |

BEAMS:

<u>EX:</u>

- Beam 31: The ratio of the beam span I to the cross-sectional height _{hw} is less than 4 (I/h=2.74). The beam is considered to be high-topped. (ECOS 18.3.1(b))
- Beam 31 Node 52 end: the eccentricity of the beam axis with respect to the column's C.B. (e=0.20m) is greater than bc/3 (bc=0.18m) (EKOS 18.3.1(c))
- Beam 31: The width of the beam (bw = 0.65m) is greater than min(2-bc, bc+hc/2) = 0.43m. (ECOS 18.3.1(a))
- Beam 31: The width of the beam (_{bw}= 0.12m) is less than 200mm.

EC8 - CPM:

Beam 31 - Node 52 end: the eccentricity of the beam axis with respect to the column's C.B. (e=0.20m) is greater than bc/4 (bc=0.15m) (EC8-1, 5.4.1.1.2.1(2))



- Beam 31: The width of the beam (bw = 0.65m) is greater than min(2·bc, bc+hw)=0.52m. (EC8-1, 5.4.1.1.2.1(3)P)
- Beam 31: The ratio of the beam span I to the cross-sectional height _{hw} is less than 3 (I/h=2.74). The beam is considered to be high-topped. (EC2-1-1, 5.3.1(3))

EC8 - CIP:

- Beam 31: The ratio of the beam span I to the cross-sectional height hw is less than 3 (I/h=2.74). The beam is considered to be high-topped. (EC2-1-1, 5.3.1(3))
- Beam 31 Node 52 end: the eccentricity of beam axis with respect to the column's C.B. (e=0.20m) is greater than bc/4 (bc=0.15m) (EC8-1, 5.5.1.1.2.1(4))
- Beam 31: The width of the beam (bw = 0.65m) is greater than min(2·bc, bc+hw)=0.52m. (EC8-1, 5.5.1.1.2.1(5)P)
- Beam 31: The width of the beam (bw = 0.12m) is less than 200mm. (EC8-1, 5.5.1.2.1.1(1)P)
- Beam 31: The ratio of height to beam section width is greater than 3,5 (hw /bw =4.74) (EC2-1-1, 5.9.3, Fig. 5.40b).



SUBSCRIPTIONS:

EX:

- Subframe 15: One dimension is less than the minimum of 250 mm. (ECE 18.4.2(a))
 Rectangular columns
- Column 18: The diameter of the circular column is less than 300 mm. (ECE 18.4.2(a) *Circular columns*
- Subframe 20: The thickness of one leg of the subframe is less than 200 mm. (ECE 18.4.2(b))
 Subframes C, T, parametric C, parametric T, Z, +, P
- Subframe 20: The length of one leg of the subframe is less than 350 mm. (ECE 18.4.2(b)) -Subframes C, T, parametric C, parametric T, Z, +, P

EC8 - CIP:

• Subframe 22: One dimension is less than 250mm. (EC8-1, 5.5.1.2.2.2(1)P)

WALLS:

<u>EX:</u>

• Subcolumn 15: The thickness b= 180mm is less than 250mm.

EC8 - CPM:

• Subcolumn 15: The thickness b= 180mm is less than 200mm. (EC8-1, 5.4.3.4.2(10))

EC8 - CIP:

• Subcolumn 15: The thickness b= 180mm is less than 200mm. (EC8-1, 5.5.3.4.5(8))



CONNECTING BEAMS:

EX:

- Beam 3: The thickness b= 180mm is less than 250mm.
- Beam 3: The height h= 300mm is less than 400mm (ECOS 18.6.3) *For number of floors up to 3.*
- Beam 3: The height h= 300mm is less than 600mm (ECOS 18.6.3) *For number of floors from 4 and above.*

EC8 - CPM:

- Beam 3: The thickness b= 180mm is less than 250mm. (EC8-1, 5.8.2(3))
- Beam 3: The height h= 300mm is less than 400mm (EC8-1, 5.8.2(3)) For number of floors up to 3.
- Beam 3: The height h= 300mm is less than 500mm (EC8-1, 5.8.2(3)) For number of floors from 4 and above.

EC8 - CIP:

- Beam 3: The thickness b= 180mm is less than 250mm. (EC8-1, 5.8.2(3))
- Beam 3: The height h= 300mm is less than 400mm (EC8-1, 5.8.2(3)) For number of floors up to 3.
- Beam 3: The height h= 300mm is less than 500mm (EC8-1, 5.8.2(3)) For number of floors from 4 and above.



STRAP BEAMS:

<u>EX:</u>

- Beam 3: The thickness b= 180mm is less than 250mm.
- Beam 3: The height h= 300mm is less than 400mm (ECOS 18.6.3) For number of floors up to 3.
- Beam 3: The height h= 300mm is less than 600mm (ECOS 18.6.3) *For number of floors from 4 and above.*

EC8 - CPM:

- Beam 3: The thickness b= 180mm is less than 250mm. (EC8-1, 5.8.2(3))
- Beam 3: The height h= 300mm is less than 400mm (EC8-1, 5.8.2(3)) For number of floors up to 3.
- Beam 3: The height h= 300mm is less than 500mm (EC8-1, 5.8.2(3)) For number of floors from 4 and above.

EC8 - CIP:

- Beam 3: The thickness b= 180mm is less than 250mm. (EC8-1, 5.8.2(3))
- Beam 3: The height h= 300mm is less than 400mm (EC8-1, 5.8.2(3)) For number of floors up to 3.
- Beam 3: The height h= 300mm is less than 500mm (EC8-1, 5.8.2(3)) For number of floors from 4 and above.

PEDILA:

EKOS - Conos:

- Apron 2: The dimension b= 400mm is less than 700mm.
- Apron 2: The total height h= 650mm is less than 700mm.
- Apron 2: The height at the perimeter of the apron u = 180 mm is less than (h/3) = 210 mm.
- Apron 2: The overhang from the vertical element a = 400 mm is less than $2 \cdot h = 500$ mm.

EKOS - Plaka:

- Apron 2: The dimension b= 400mm is less than 700mm.
- Apron 2: The height h= 450mm is less than 500mm.



• Apron 2: The overhang from the vertical element a = 400 mm is less than $2 \cdot h = 500$ mm.



Sizing messages

BEAMS - PEDESTALS

| Color | Symbol | Description | ECOS | EC2-8 | Old |
|---------|---------|---|--------------|--------------|--------------|
| RED | ρ(4%) | Exceeding the maximum reinforcement rate of 4% | \checkmark | \checkmark | |
| RED | pmax | Exceeding the maximum percentage of reinforcement EC8: | \checkmark | \checkmark | |
| | | 95.4.3.1.2 OF ECE: 918.3.2 | | | |
| RED | AS | The routine doesn't converge | \checkmark | \checkmark | |
| RED | sep | Exceeding permissible shear stresses (Pedestals) | \checkmark | \checkmark | |
| RED | shtr | Exceeding the breaking stresses of shtr (Pedestals) | \checkmark | \checkmark | |
| RED | N | New axial control Top-End EC8-5: §5.4.1.2 | | \checkmark | |
| KERAMID | lbd | Unavailable support width for anchorage length | \checkmark | \checkmark | |
| KERAMID | dbl | Exceeding the maximum longitudinal reinforcement diameter EC8: §5.6.2.2 (2) | | \checkmark | |
| KERAMID | VRd2 | Concrete oblique clamp failure _{Vsd>VRd2} (EKOS) | \checkmark | | |
| KERAMID | (V-T)'2 | Not satisfying the $(T_{sd/TRd})^2 + (V_{sd/VRd})^2 \le 1.00 : ECOS (12.1b)$ | \checkmark | | |
| KERAMID | Vrdmax | Failure of concrete oblique crushers Vsd>VRd _{,max} by region (EC2) | | \checkmark | |
| KERAMID | (V-T) | Non-fulfilment of _{TRd/TRdmax} +≤ 1.00 (EC2) | | \checkmark | |
| KERAMID | asw | _{asw>aswmax} per area EC2 §6.2.3 (6.12) | | \checkmark | |
| KERAMID | Δ | Steel Tensions - Concrete Tensions (Old Regulation) | | | \checkmark |
| KERAMID | Δ | Control in torsion (Old Regulation) | | | \checkmark |
| KERAMID | W | Folding Top-Middle-End | | | |
| KERAMID | Σ | Exceeding distance or diameter limits Clip | \checkmark | \checkmark | |
| KERAMID | Σ | Bidiagonal mounted per area | | | |
| RED | Φ | Bending armament mounted | | | |
| YELLOW | М | Reinforcement with O.S. Cloak | | \checkmark | |
| YELLOW | ٨ | Reinforcement with metal blades | | \checkmark | |
| YELLOW | Ι | Reinforcement with IOP composites | | \checkmark | |



| Color | Symbol | Description | ECOS | EC2-8 | Old |
|---------|--------|---|--------------|--------------|--------------|
| RED | К | Doesn't the routine of biaxonics converge | \checkmark | \checkmark | |
| RED | nd | Exceeding the permissible axonal rise power | \checkmark | \checkmark | |
| RED | ρ(4%) | Exceeding the maximum reinforcement rate of 4% | \checkmark | \checkmark | |
| KERAMID | VRd2 | Concrete oblique clamp failure _{Vsd>VRd2} (EKOS) | \checkmark | | |
| KERAMID | Σ | Exceeding distance or diameter limits Clip | \checkmark | \checkmark | |
| KERAMID | VRdmax | Failure of concrete oblique crushers Vsd>VRd _{,max} by region (EC2) | | \checkmark | |
| KERAMID | (V-T) | Non-fulfilment of _{TRd/TRdmax} +≤ 1.00 (EC2) | | \checkmark | |
| KERAMID | asw | _{asw>aswmax} per area EC2 §6.2.3 (6.12) | | \checkmark | |
| KERAMID | λ | Short column control | | | \checkmark |
| YELLOW | М | Reinforcement with Cloak O.S. | | \checkmark | |
| YELLOW | ٨ | Reinforcement with metal blades | | \checkmark | |
| YELLOW | Ι | Reinforcement with IOP composites | | \checkmark | |
| - | ? | A re-solving of the capacity check and column sizing is required. Appears after change of beam reinforcements | \checkmark | \checkmark | |

PENS

PEDILA

| Color | Symbol | Description | ECOS | EC2-7-8 | Old |
|-------|--------|---|--------------|--------------|-----|
| | Н | INCREASE IN FOOT HEIGHT AND IT DOES NOT COVER IT, | \checkmark | \checkmark | |
| | Z | Exceeding of limit load | \checkmark | | |
| | е | Exceeding eccentricity | \checkmark | \checkmark | |
| | sep | Permissible voltage exceeded | \checkmark | \checkmark | |
| | shtr | Exceeding the breaking stress | \checkmark | \checkmark | |