STAAD Pro Analysis Solution Steps  
By: Consultant Professor Nabeel Al-Bayati

STAAD Pro Solution Steps

Methods of Analysis:

A- Edit Commands Lines Method  
B- Graphical Method

1. Modeling

2. Loading

3. Analyzing:  
   - Elastic Analysis  
   - P-Delta Analysis  
   - Buckling Analysis  
   - Cable Analysis

4. Reading Results:  
   - Tables results  
   - Graphical results
A. Geometrical Layout:

i. Tables:

<table>
<thead>
<tr>
<th>Node</th>
<th>X (m)</th>
<th>Y (m)</th>
<th>Z (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>0.00</td>
<td>0.00</td>
<td>0.90</td>
</tr>
<tr>
<td>4</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

ii. Grid (Linear, Radial, Irregular) - Snap Node/Beam

<table>
<thead>
<tr>
<th></th>
<th>Linear</th>
<th>Radial</th>
<th>Irregular</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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B. **Cross Sections**: 

(step1-Define section  \(\rightarrow\)  step2 – Assign section)
C. **Material Constants** :

(step1-Define Material  \[\Rightarrow\]  step2 – Assign Material )

i. Density

![Material Constant - Density](image)

ii. Elasticity

iii. Poisson's Ratio

iv. Alpha (Coefficient of Thermal Expansion) of the materials

**Default Material Constants :**

![Structure1 - Materials](image)
D. Supports:

(step1-Define Supports → step2 – Assign Supports)

i. Fixed (restrained in all 6 degrees of freedom)

ii. Pinned (restrained in all three translational degrees of freedom and free in the 3 rotational degrees of freedom)

iii. Fixed But (create various types of roller, hinge and spring supports with specified restrained degrees of freedom)

iv. Enforced (same as a Fixed support except that the restrained degrees of freedom are defined in terms of being stiff springs)

v. Enforced But (same as the “Enforced” support except that we have a choice on the degrees of freedom we wish to restrain)

vi. Multi Linear Spring (allows the user to model the support type for which the resistance offered to external loads varies with the extent of deformation of the support node)

vii. Foundation (create spring supports for independent footings and mat foundations)

viii. Inclined (create supports that offer restraints in an axis system that is inclined with respect to the global axis system)
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2. Loading

i. Self weight
ii. Nodal Load
iii. Member load

iv. Area Load
v. Floor Load
vi. Plate Loads

vii. Temperature Load
viii. Seismic Load
ix. Wind Load
x. ........
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3. Analyzing

4. Reading Results

i. Tables result
ii. Graphical Results