Advanced seam creation with quad transition

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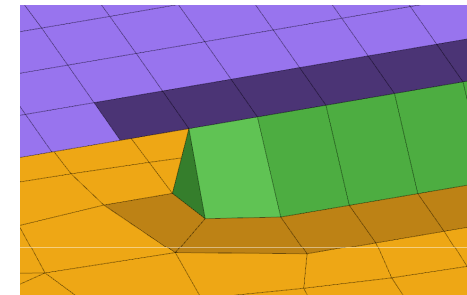# Lap weld with caps and quad transition

seam-quad (angled+capped+L)

is accessible in the Nastran userprofile in the connectors seamweld panel. The definition in the feconfig.cfg can easily be duplicated to make this kind of realization available for other user profiles as well.

CFG nastran 101 seam-quad (angled+capped+L)

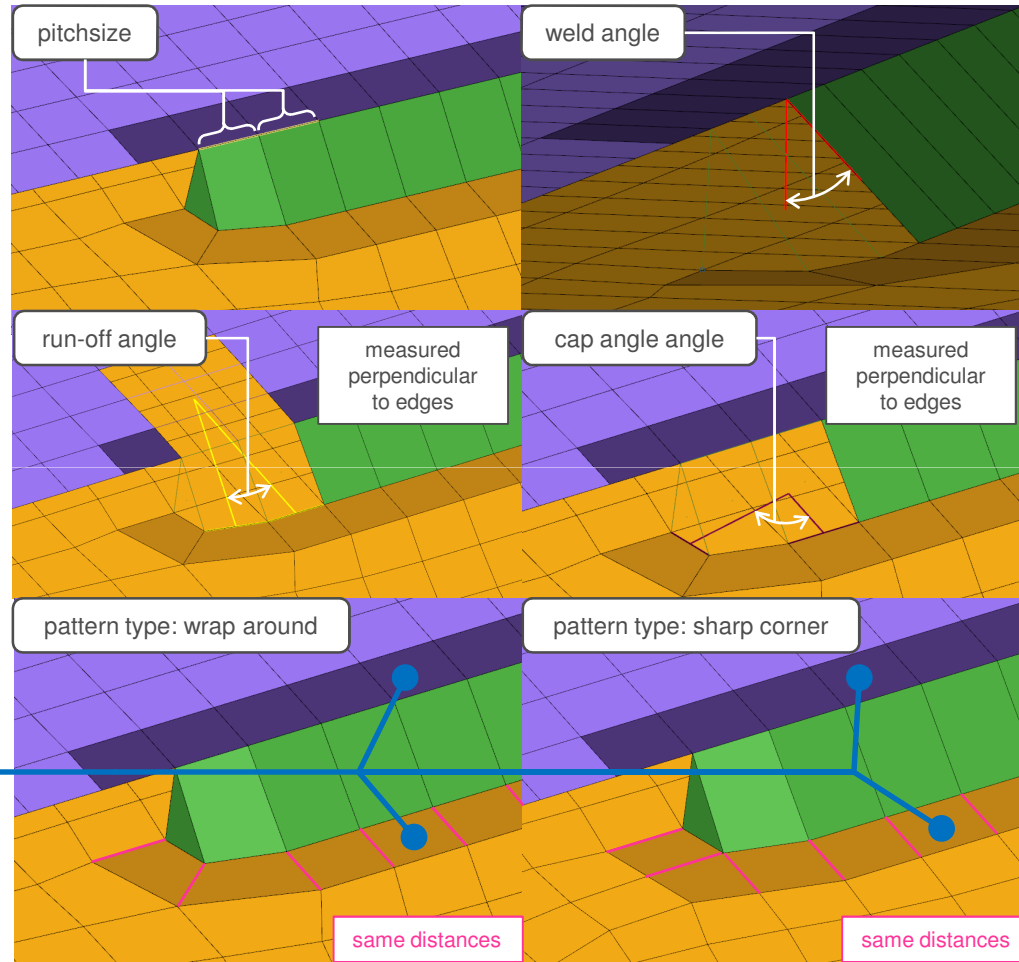*filter seam

*style quad 4

*head

*body 0

quad4 1 1

This realization type is intended to be used together with the quad transition option.

The pictures on the next page describe the parameters, which influence the appearance.

Lap weld with caps and quad transition

- pitchsize
- weld angle (0°-60°, default 60°)
- run-off angle (0°-45°, default 10°)
- cap angle (45°-90° default 75°)
- pattern type
  - wrap around (default)
  - sharp corner

The darker elements are the meshimprinted ones. On the backside of the quadweld trias are allowed.

pitchsize

weld angle

run-off angle

measured perpendicular to edges

cap angle angle

measured perpendicular to edges

pattern type: wrap around

pattern type: sharp corner

same distances

same distances

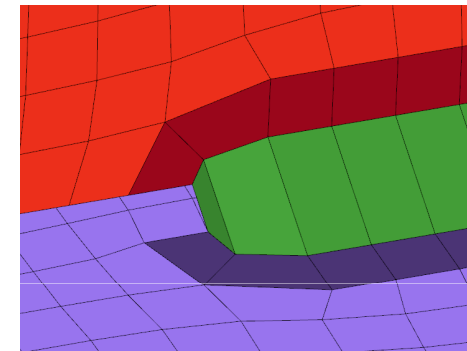# T weld with caps and quad transition

seam-quad (angled+capped+T)

is accessible in the Nastran userprofile in the connectors seamweld panel. The definition in the feconfig.cfg can easily be duplicated to make this kind of realization available for other user profiles as well.


```
CFG nastran 101 seam-quad (angled+capped+T)
*filter seam
*style quad 5
*head
*body 0
quad4 1 1
```


This realization type is intended to be used together with the quad transition option.

The pictures on the next page describe the parameters, which influence the appearance.

T weld with caps and quad transition

- pitchsize
- weld angle (0°-60°, default 60°)
- weld height (default 5.0)
- run-off angle (0°-45°, default 10°)
- cap angle (45°-90° default 65°)
- pattern type
  - wrap around (default)
  - sharp

The darker elements are the meshimprinted ones. On the backside of the quadweld trias are allowed.
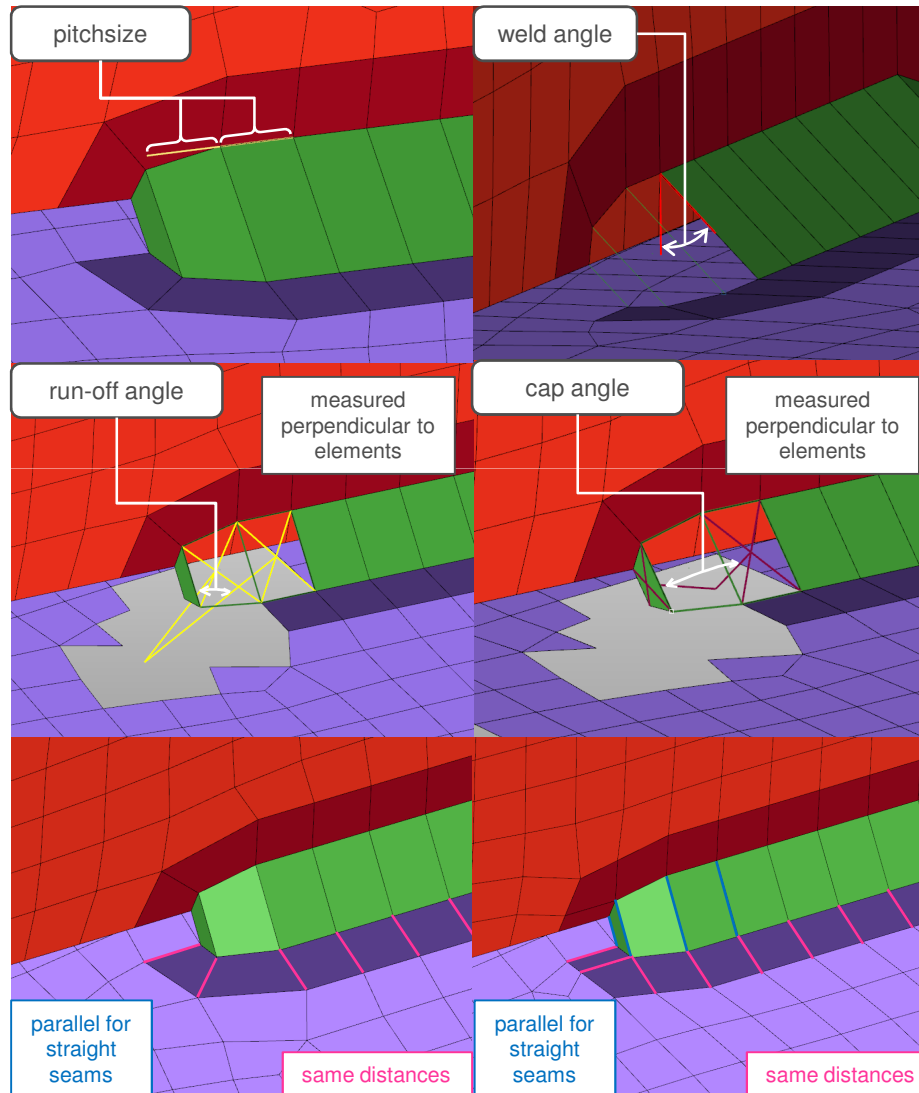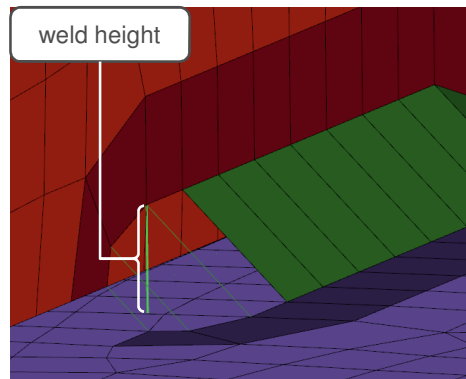
Spotweld nugget with shell coating

acm (shell gap + coating)

is accessible in the Nastran, OptiStruct and Abaqus userprofile in the connectors spotweld panel. The definition in the feconfig.cfg can easily be duplicated to make this kind of realization available for other user profiles as well.

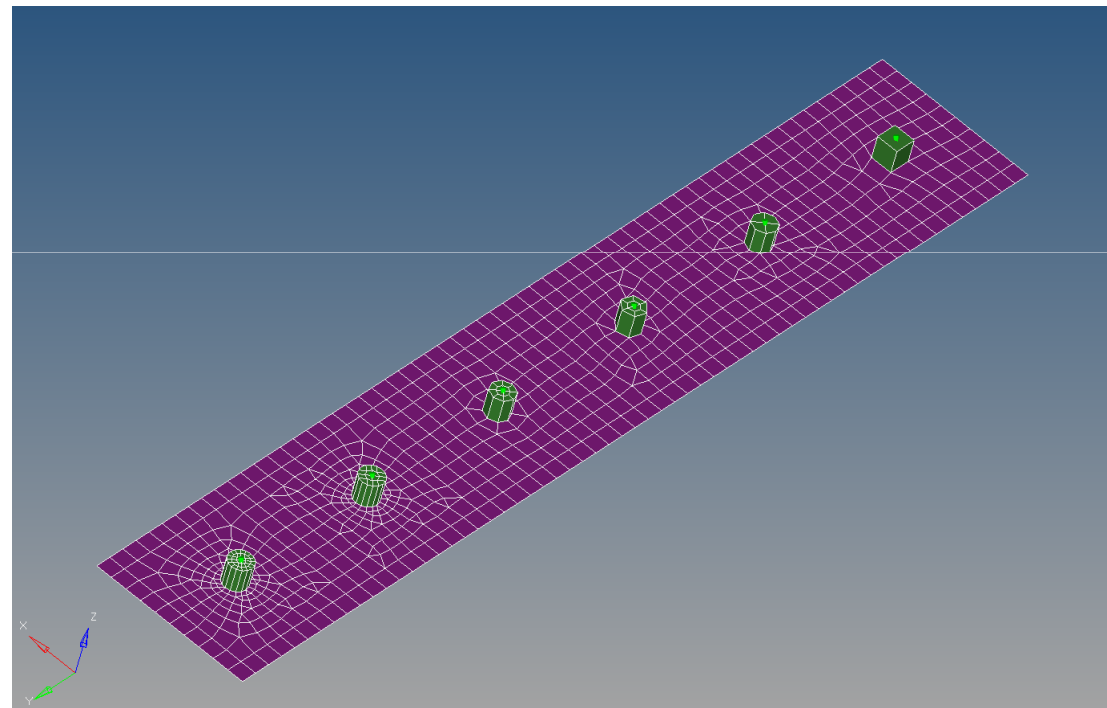CFG nastran 72 acm (shell gap + coating)

*filter spot

*style acm 4

*body 0

hex8 1 1

This realization creates one hexa cluster per connectors and realizes a node to node connection to the linked shell meshes (shell coating). Different patterns are available. This is driven by the number of hexas.

The appearance can be influenced via the diameter and the washer layer activation.

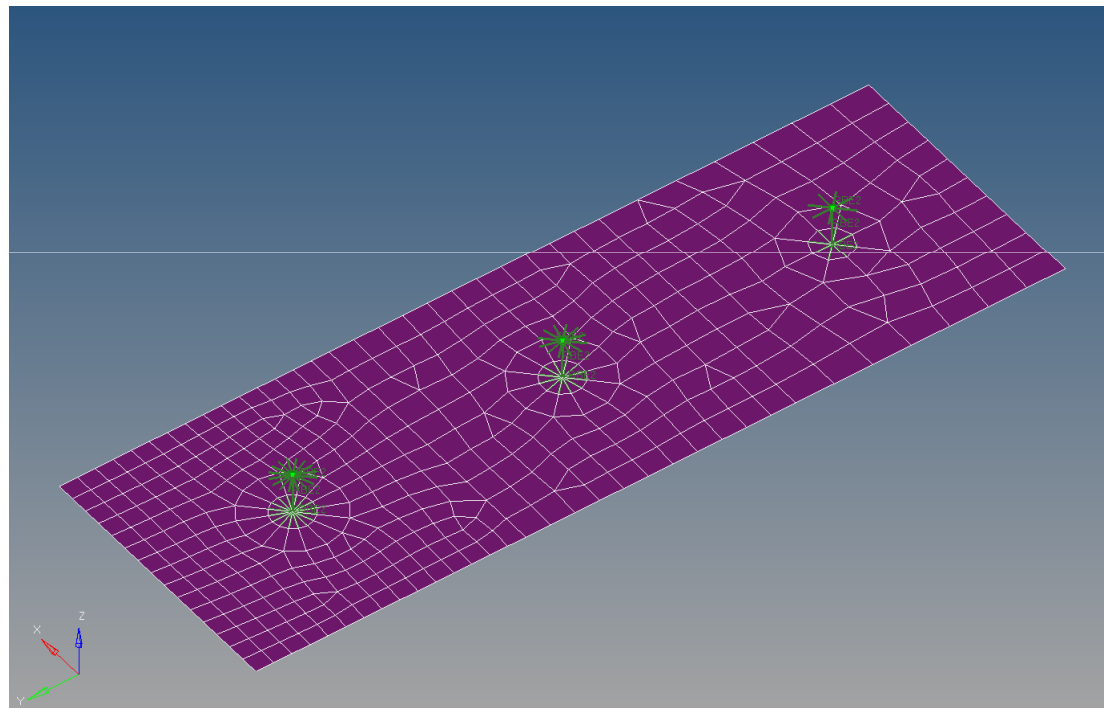# Spotweld with rigid spider and circle segments

pie (rigid spider)

is accessible in the Nastran and OptiStruct userprofile in the connectors spotweld panel. The definition in the feconfig.cfg can easily be duplicated to make this kind of realization available for other user profiles as well.

CFG nastran 73 pie (rigid spider)

*filter spot

*head

rigidlink 1 4

*body 0

rigid 1 1

This realization creates one circle mesh out of a certain number of segments per link (shell mesh). Each circle mesh gets stiffen by a rigid spider which middle nodes are joined by a further straight rigid element.

The appearance can be influenced via the diameter, the number of segment elements and the washer layer activation.

1D Quad transition realizations

Every 1D realization can be done together with the quad transition option. It is accessable in all userprofiles in the connectors spotweld panel. Once this option is set the 1D element will be created exactly as connection between the projection points on the approppriate linked shell components. Around these projection points are 4 perfect quads created. Further element rows need to be remeshed as well to realize a proper mesh transition. The size of the quad elements depends on the average mesh size in the region of the projection point or the user can give a specific quad element size in the panel.