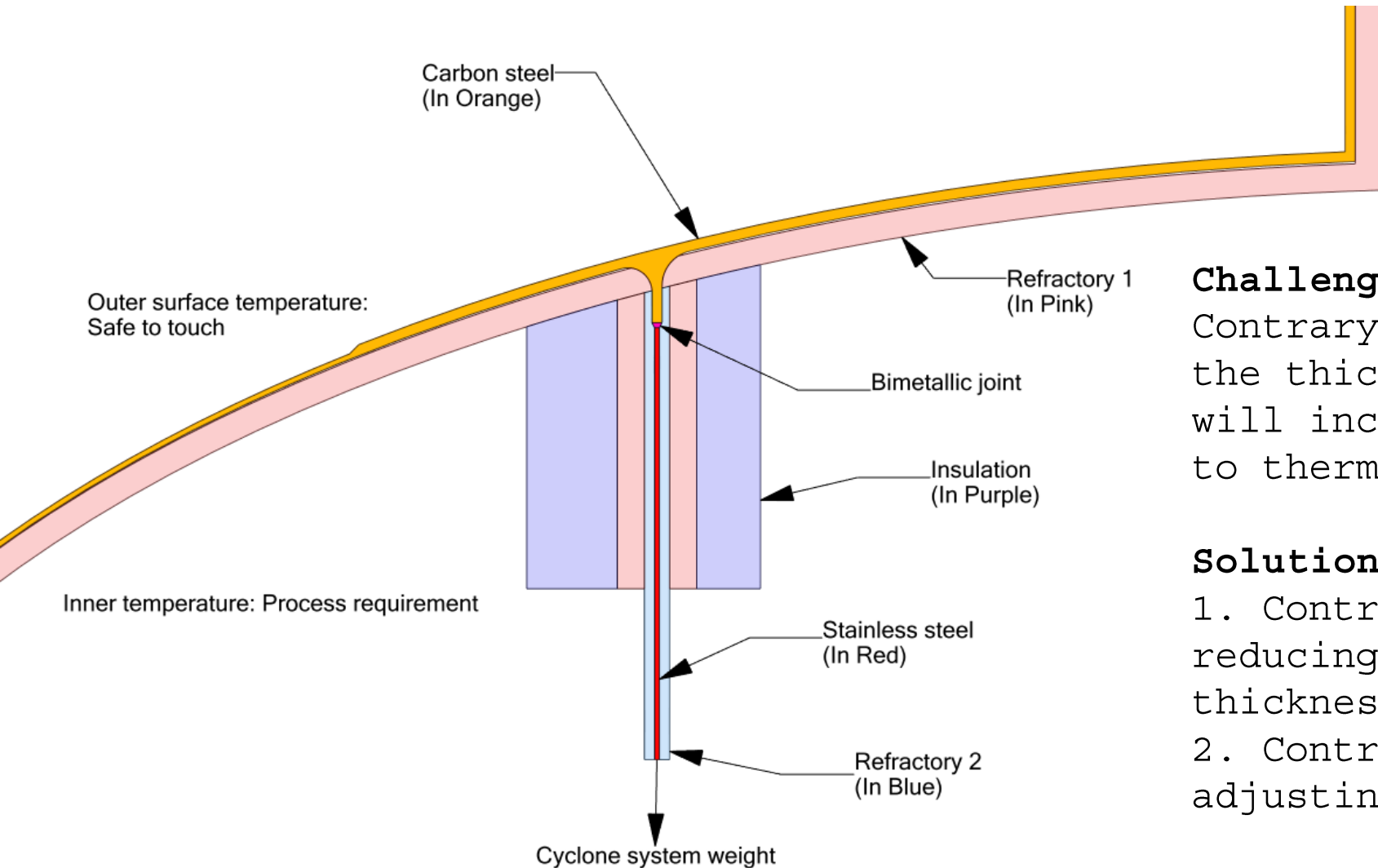


Bimetallic junction design for extreme thermal stresses

FCC Reactor and regenerator plenum to head junction



Challenge faced:

Contrary to intuition, increasing the thickness of high stress members will increase the stress further due to thermal gradients.

Solution:

1. Control structure stiffness by reducing as well as increasing thicknesses in different areas
2. Control thermal gradients by adjusting insulation thickness

Disclaimer: A simplified-representative sketch is created without use of any proprietary information
(Dimensions are assumed, Sketch is not to scale)