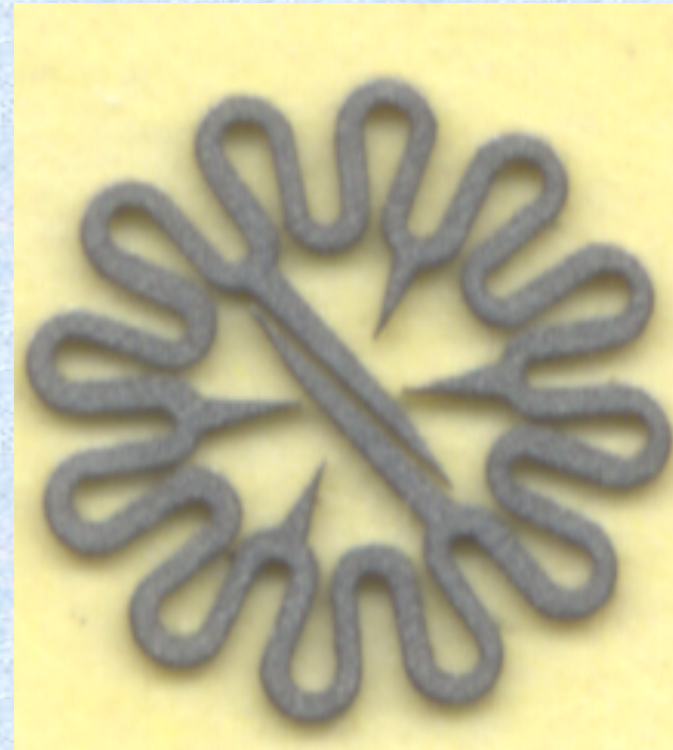


IVS StarClose™ Clip: Vascular Closure

- Lasercut from NiTi sheet
- Etching represents a cost-reduction strategy
- Long tines to grab tissue
- Short tines to pinch & seal
- FEA used to shorten design cycle & determine design margins

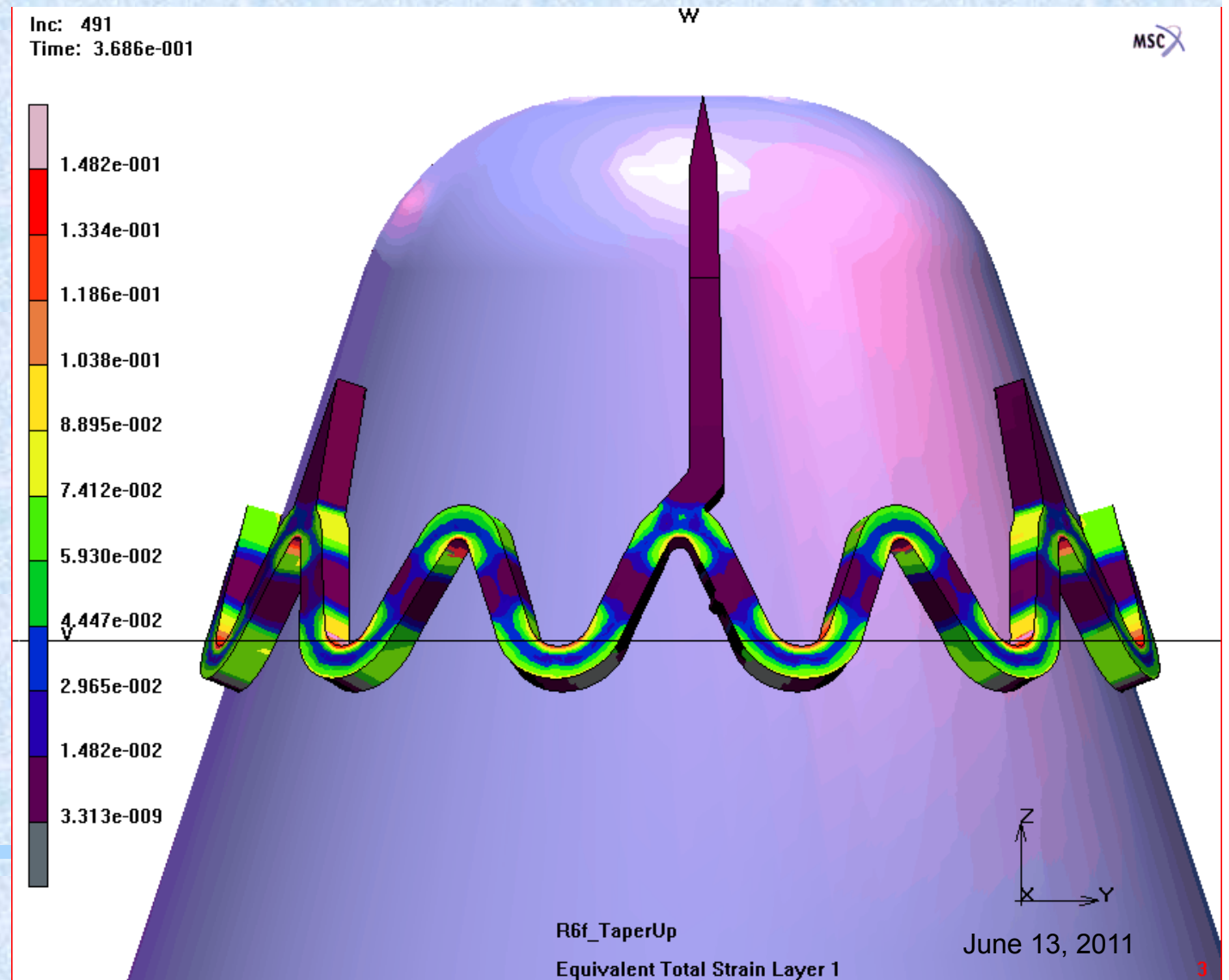


The StarClose™ device received an MD&M Medical Device Excellence Award in 2005 for its innovative design and >99% success rate. PEC was acknowledged as a key contributor to the successful design and launch of the StarClose™ product.

StarClose is a Registered Trademark of Abbott Vascular Devices

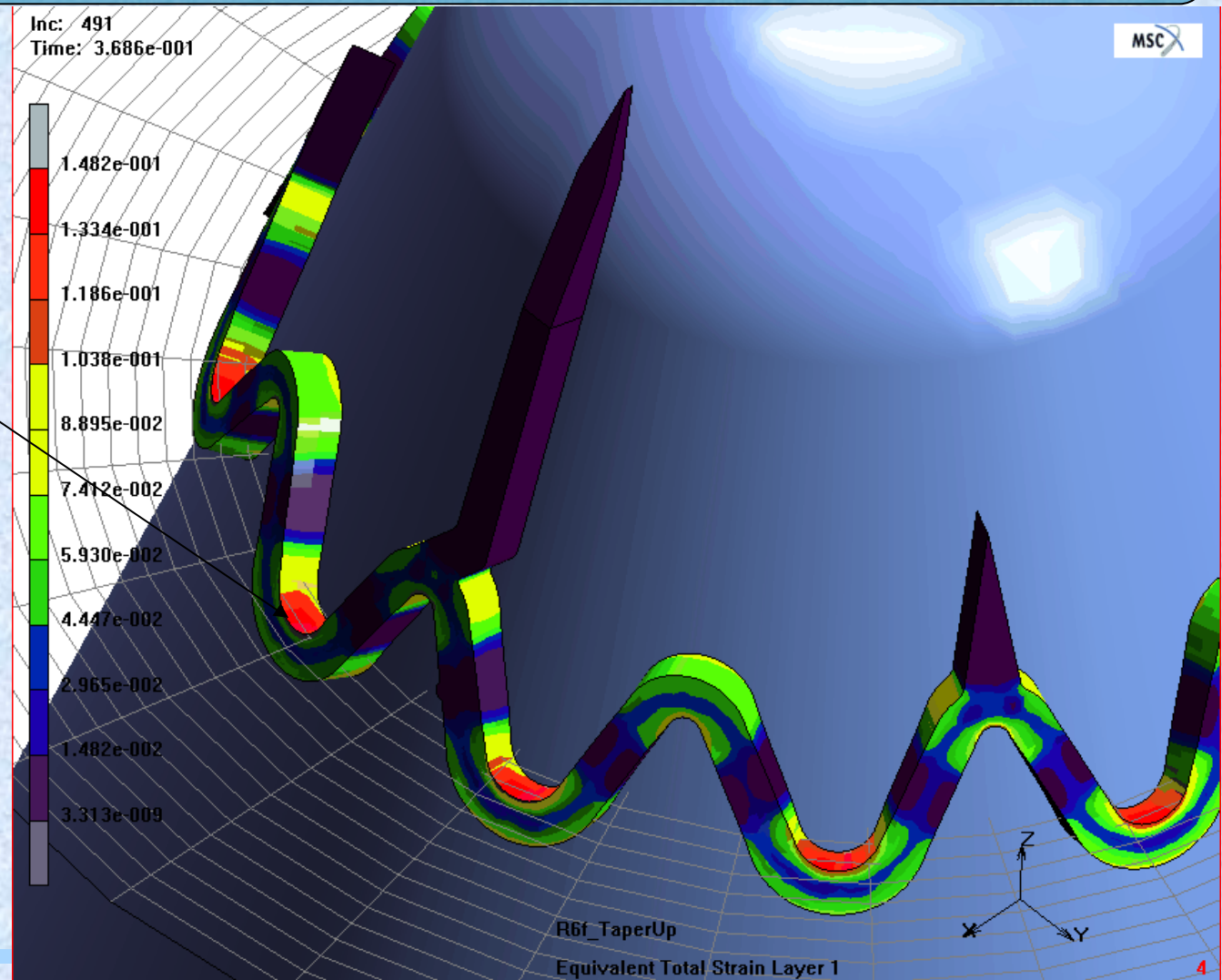
Finite Element Model: Clip on Mandrel

- Tines do not penetrate the artery wall

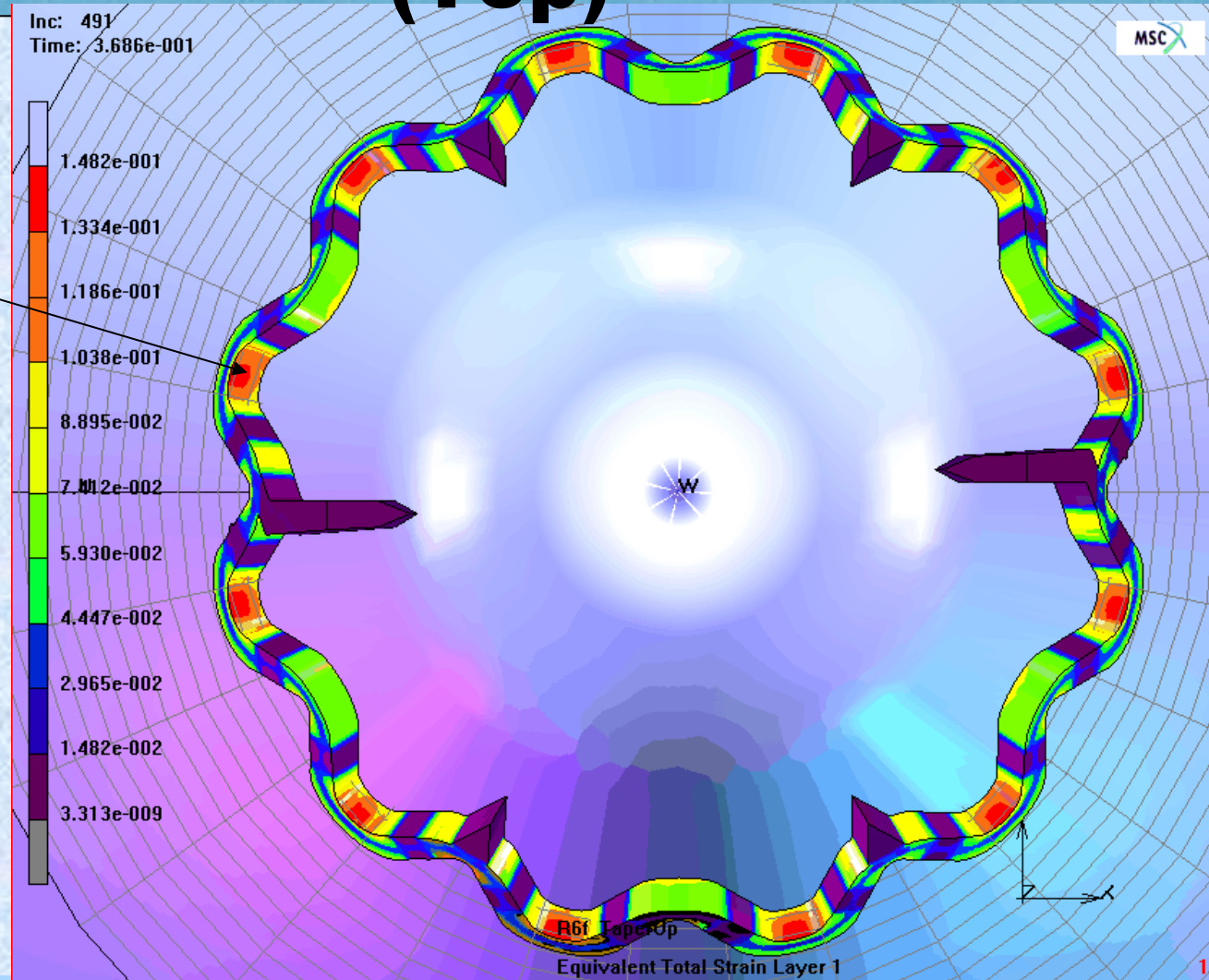


Finite Element Model: Clip on Mandrel

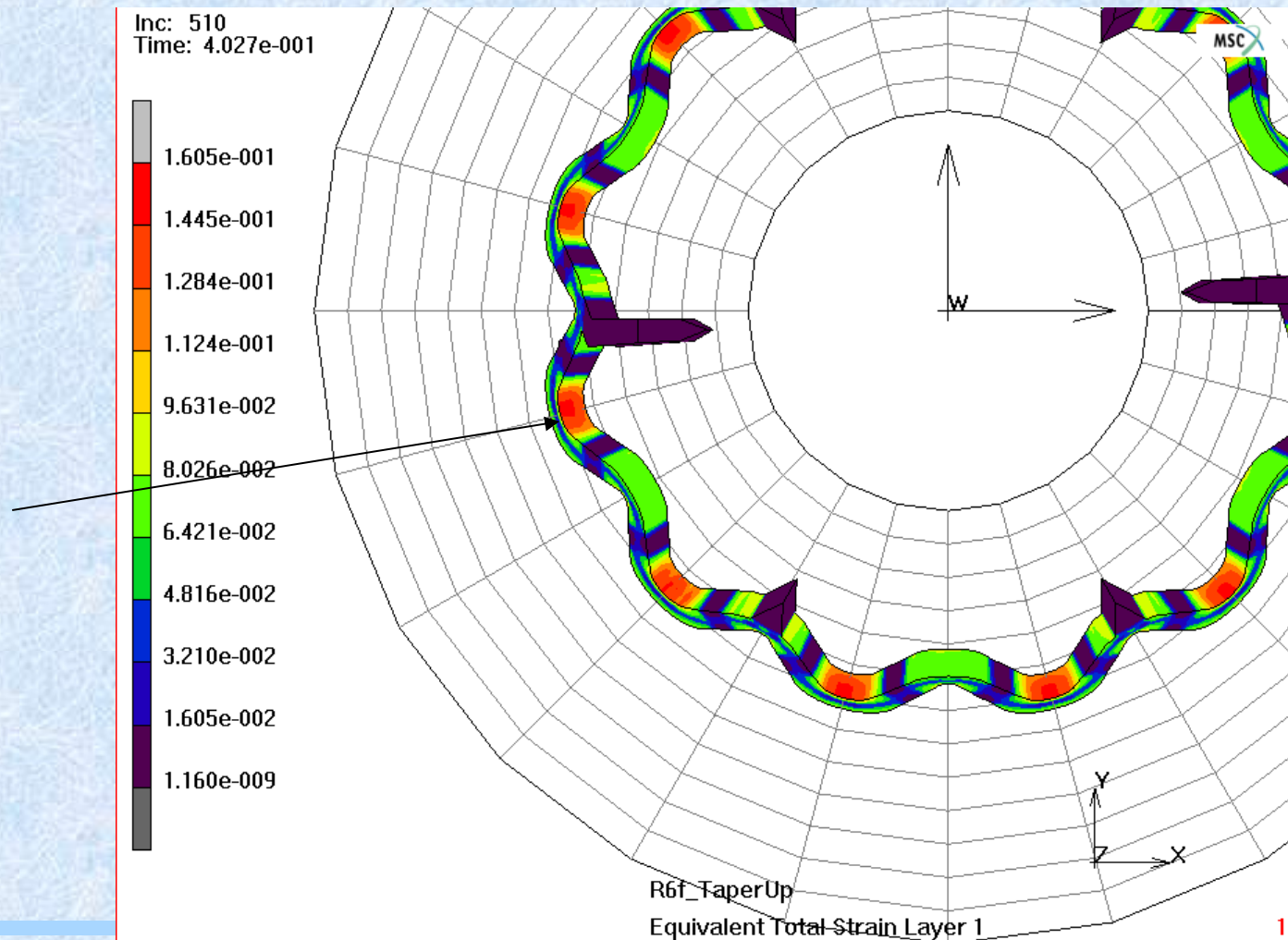
- Max. tensile strains are on inside of outer bends



Finite Element Model: Clip on Mandrel (Top)

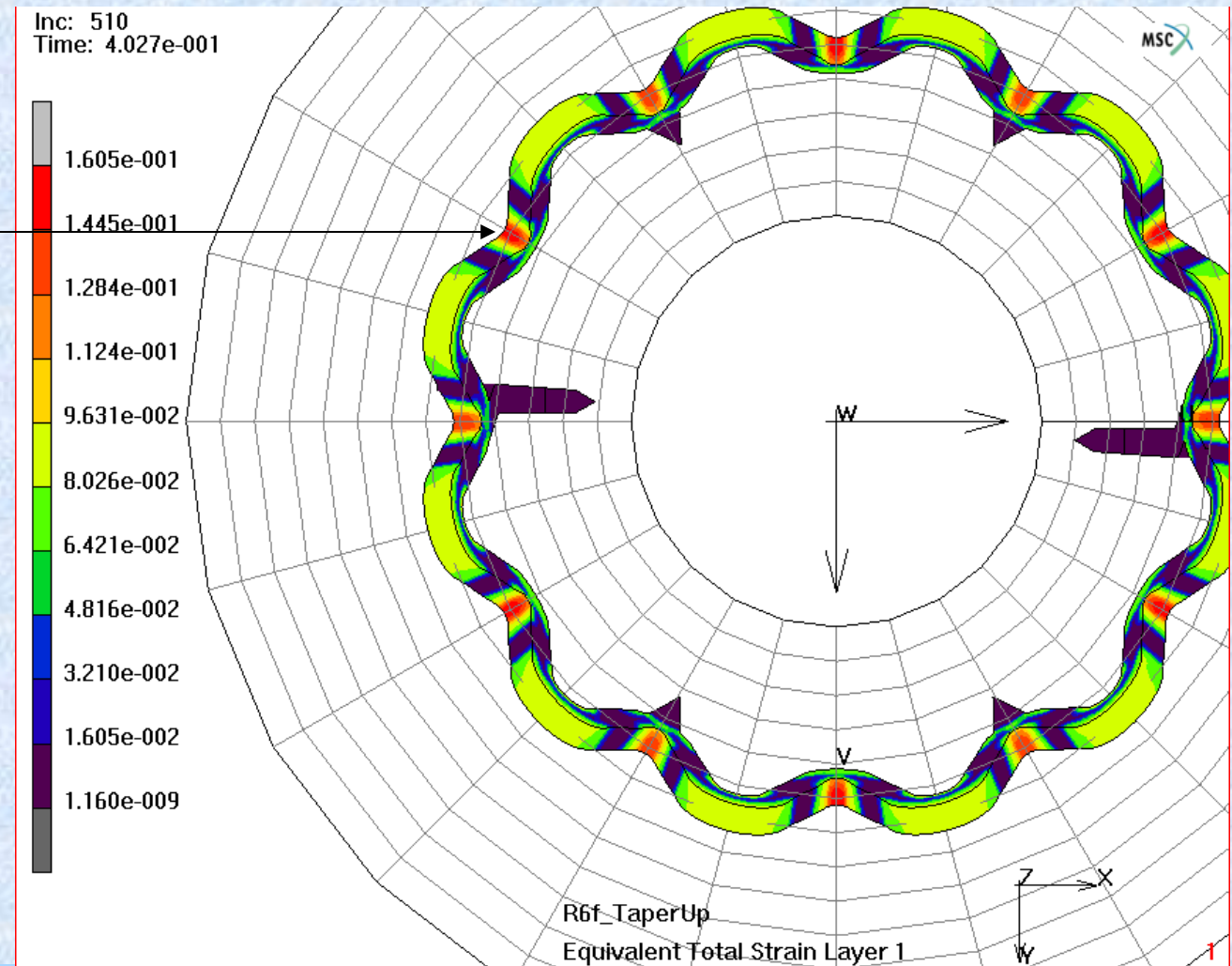


Finite Element Model: Clip on Mandrel (Top)

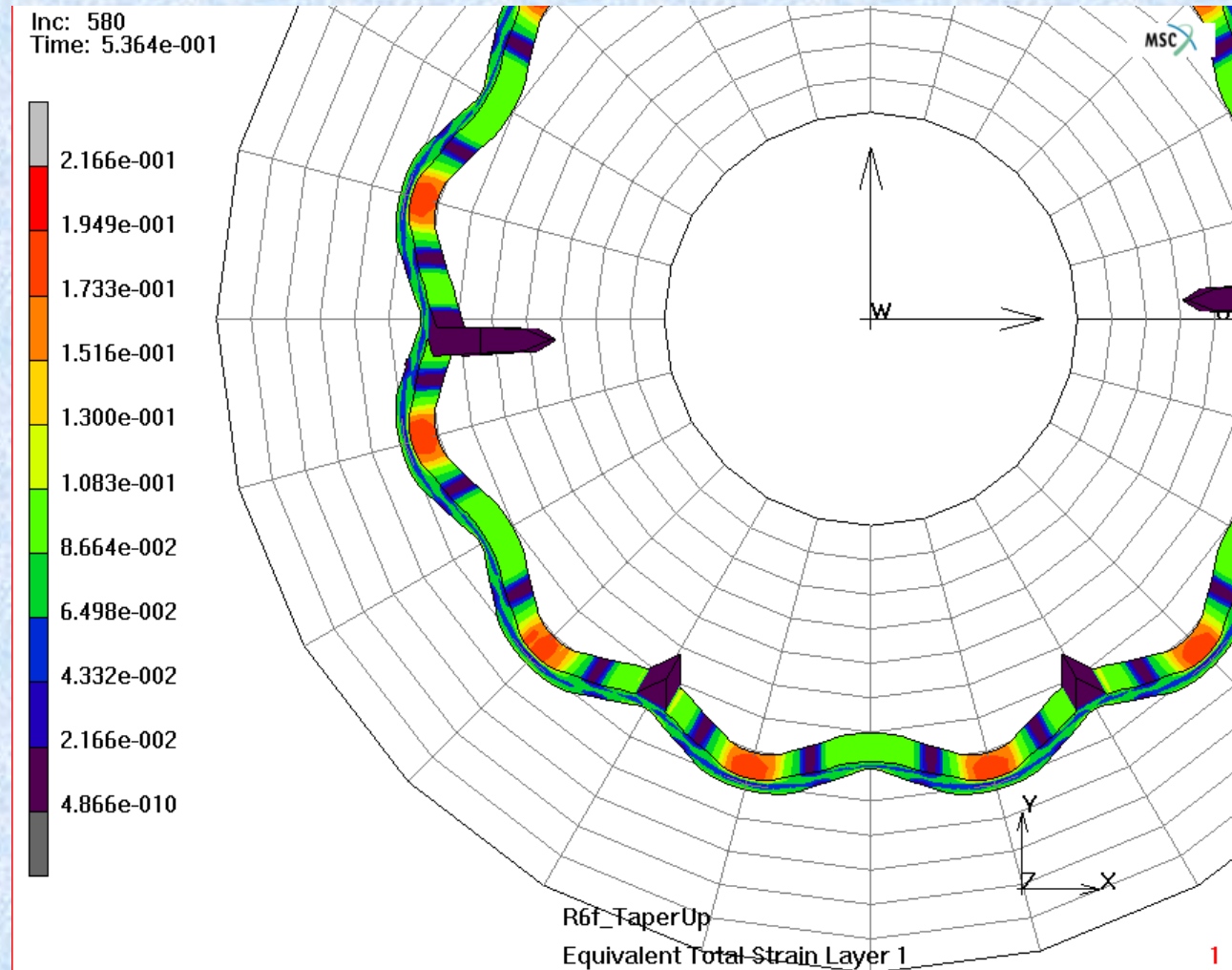


Finite Element Model: Clip on Mandrel (Bot)

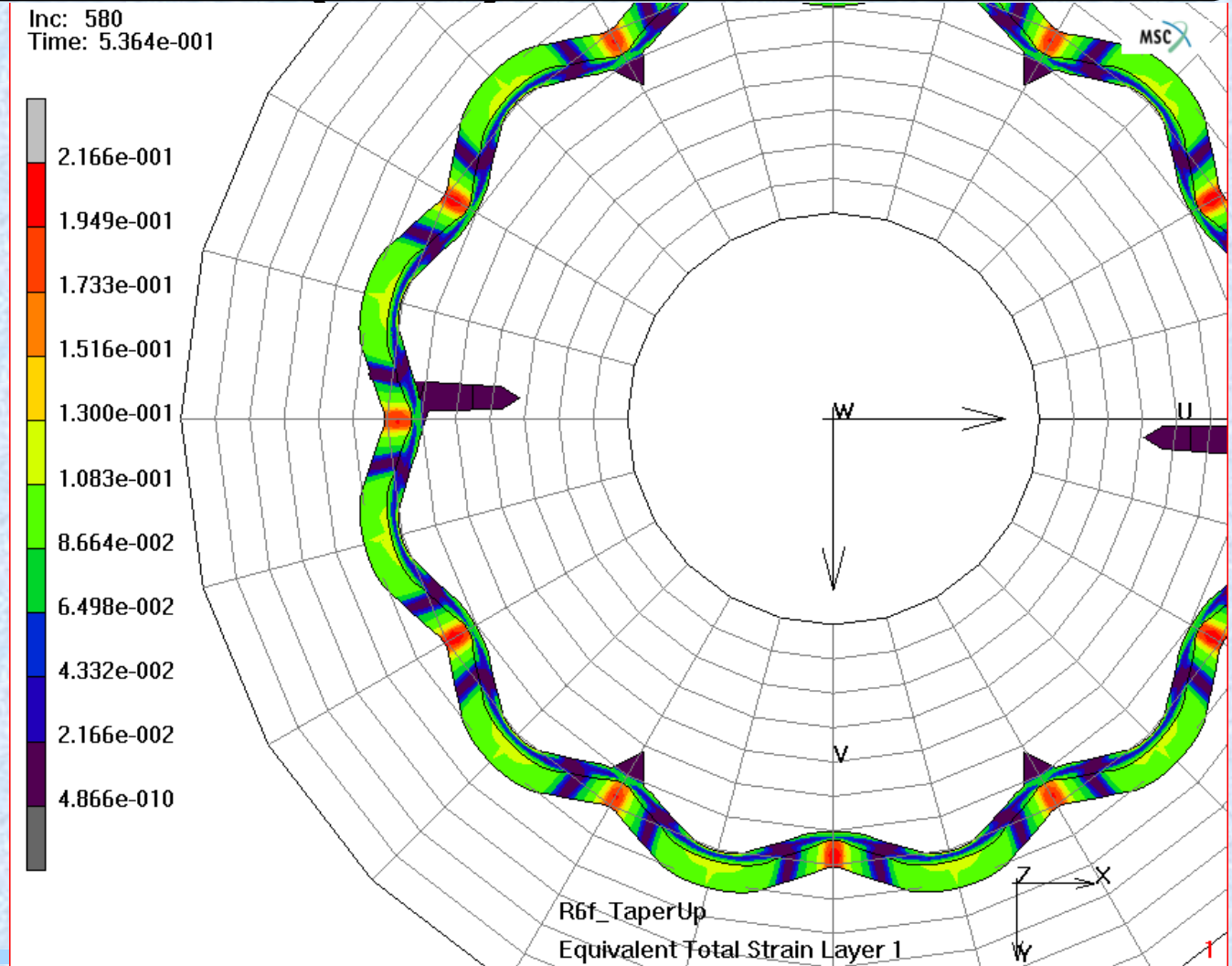
- Max. strains on inside of inner bends are slightly lower



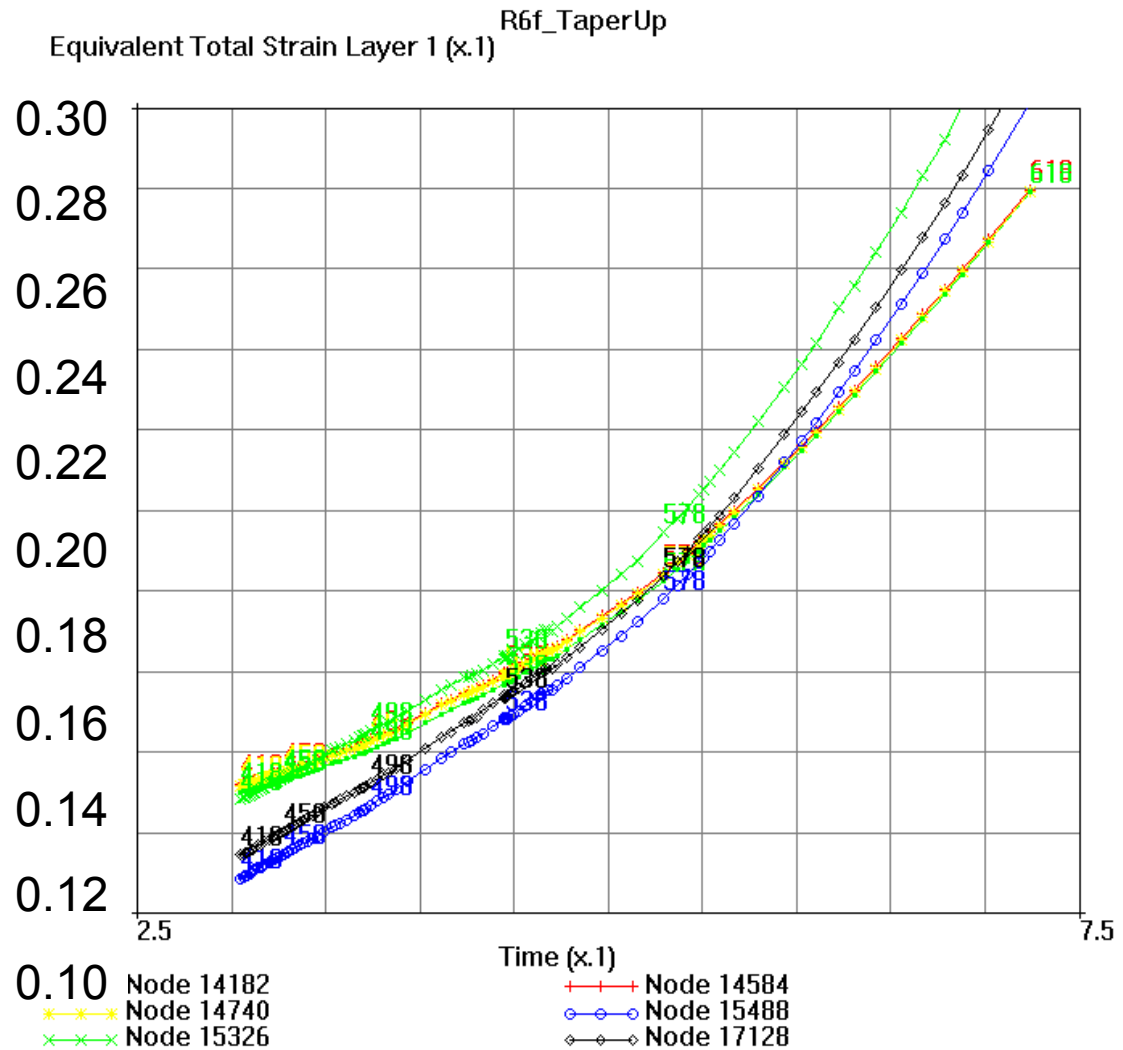
Finite Element Model: Clip on Mandrel (Top)



Finite Element Model: Clip on Mandrel (Bot)



Max. Equivalent Strain



1