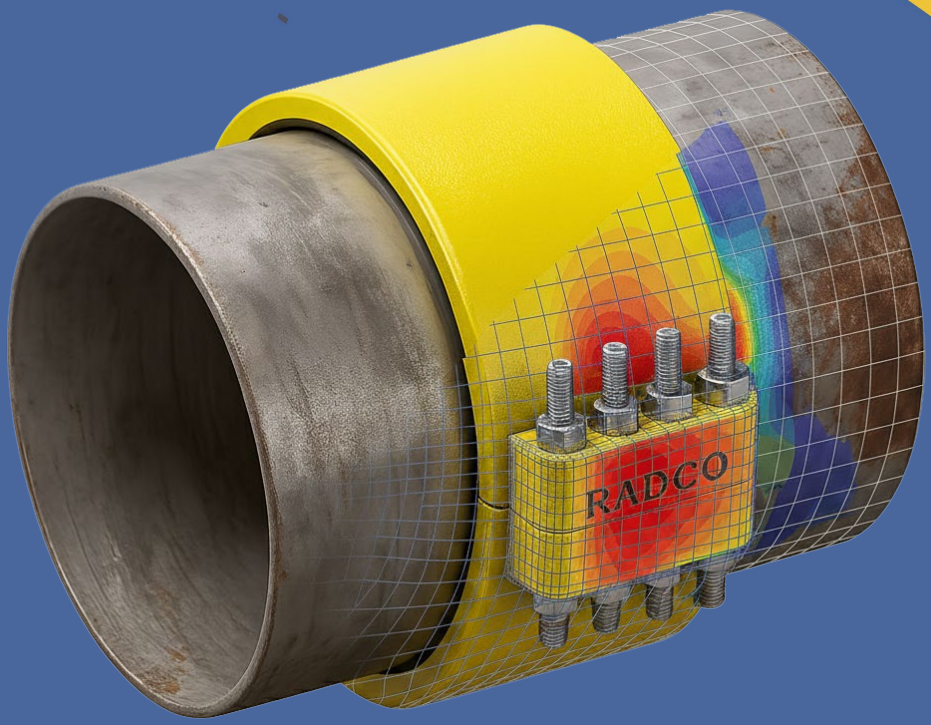
RADCO
Mahrad Sanat Khallagh Company
www.radcofix.com
radco@radcofix.com

DESIGN REPORT



PRODUCT: X in #X Split Sleeve Design Report

TO:

MAIN CLIENT:

Rev: 01 Date: JANUARY 1, 2026

TITLE:

Split Sleeve Clamp Design Report

Main Client:

CONTACT:

PREPARED BY:

MahRad Sanat Khallagh Company (RADCO)

RADCO ENDORSEMENT:

The objective of this analysis and report is to evaluate the structural integrity of the split sleeve leak-repair clamp under specified operational and hydrostatic test conditions. Using nonlinear finite element analysis in accordance with industry standards (API 6H, ASME B31.4, ASME PCC-2), the study aims to verify that the clamp design meets all safety, performance, and compliance requirements, ensuring long-term reliability for subsea pipeline service.

M. Rahmani:

M.sc in Mechanical Engineering

A. Shaghaghi:

PhD in Mechanical Engineering

Revision	:	1
Date	:	January 1, 2026
Doc. No.	:	EN-RAD-125-01

Split Sleeve Clamp – FEA Results Summary

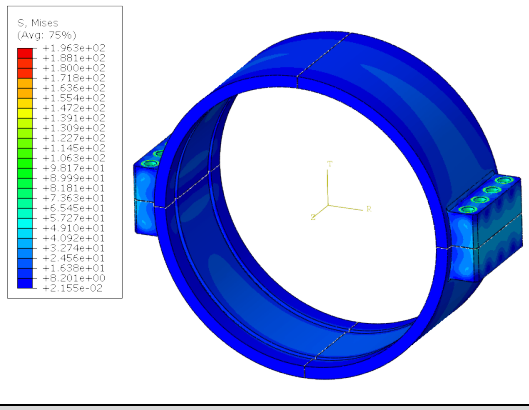
Project: Split Sleeve Leak Repair Clamp

Design Codes: API 6H, ASME B31.4, ASME PCC-2

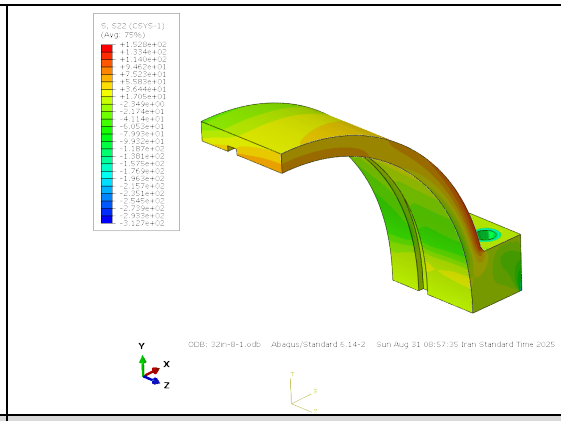
FEA Software: Abaqus

The table below presents a concise summary of the finite element analysis results for both Design and Hydrotest conditions. It includes calculated values, allowable limits, and the resulting safety factors for engineering assessment.

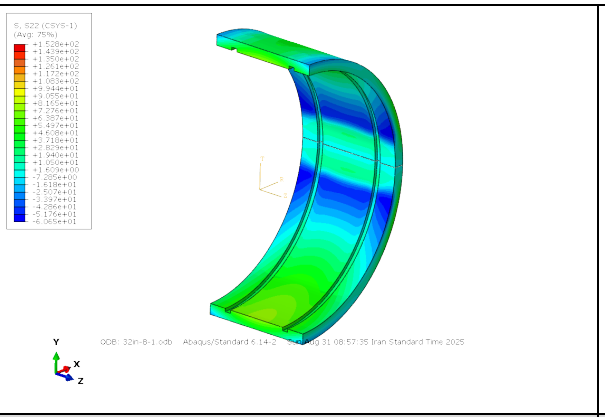
Parameter	Working condition		Hydrotest condition	
	Calculated value	Allowable value	Calculated value	Allowable value
Tangential (hoop) stress [MPa]	120	167	180	207
Clamp opening [mm]	0.4	NA	0.6	NA
Stud bolt load [KN]	42% F_P	75% F_P	63	75% F_P



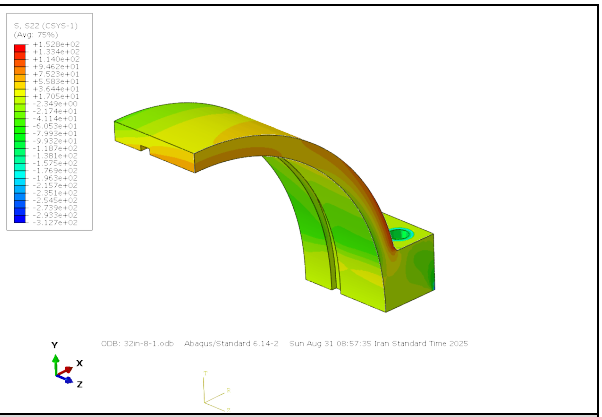
Mises stress



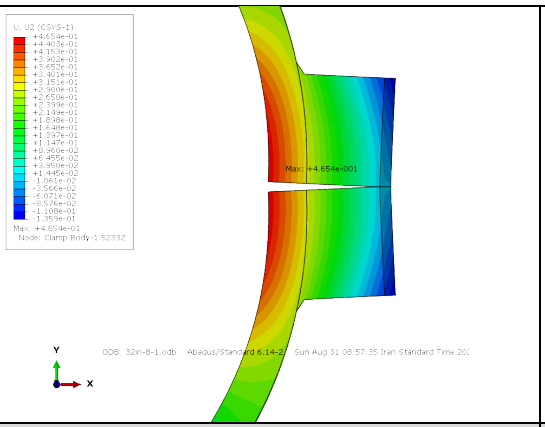
Hoop stress; clamp wall



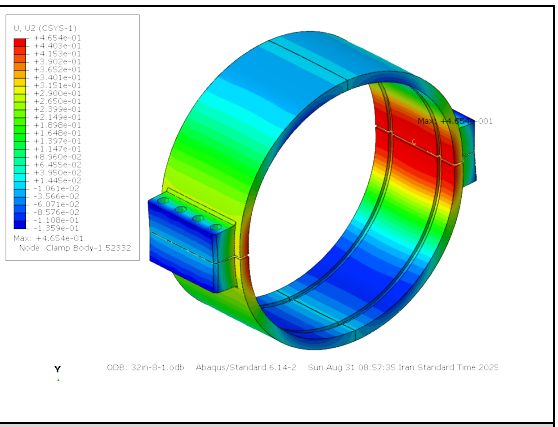
Hoop stress; clamp wall



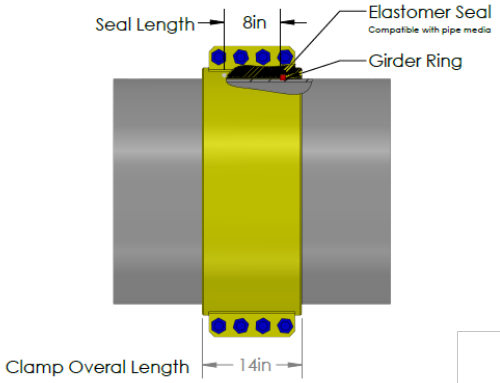
Hoop stress; clamp wall

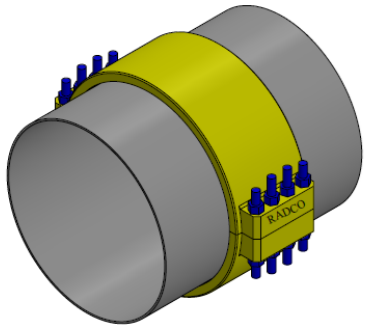


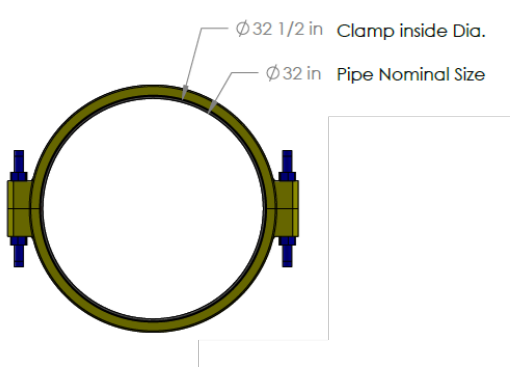
U2- displacement -clamp opening



U2- displacement







Product Details

Pipeline Nominal Size	in	32
ANIS Rating	#Class	300
Operating Pressure	bar	40
Pipeline Actual OD	in	32
Seal Active Length (S)	in	8in
Clamp Inside Diameter (ID)	in	32 ½
Clamp Overall Length (L)	in	14
App. Weight	kg	340
Qty.		14

Technical data

Design code	API 6 H , ASME B 31.4 , ASME PCC 2
ANSI Rating	#300
Temperature	85°C

Material of construction

ITEM	Description	Material
1	Body	A216, API 6H
2	Stud Bolts	A 193 B7m
3	Nut	A 194 (2HM)
4	Protection Sheet	SS304L
5	Coating	Epoxy
6	Sealing	HNBR

Notes

1. All edges are chamfered to 45 deg. for safe handling
2. All dimensionss are in mm , unless specified
3. Dimensions are subjected to change

Client:

Title: Split Sleeve Clamp

RADCO

Drawn By: A.Ta
Checked By: M.R
Approved By: A.M

Dwg. No.: RAD-2025-D1-01

Rev. 1

For proposal use only. The overall configuration and dimension are subject to change and will be provided upon order award.