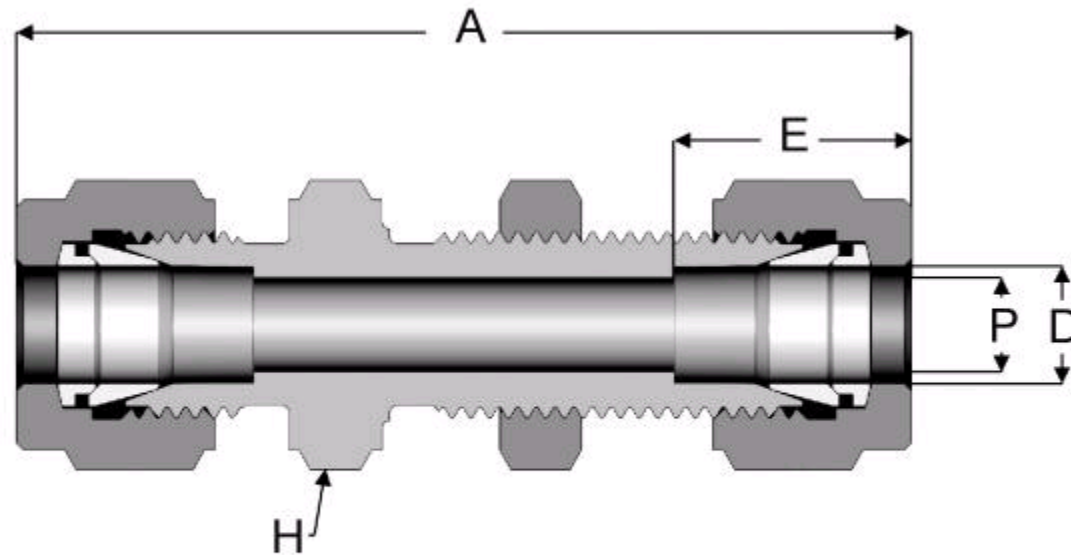
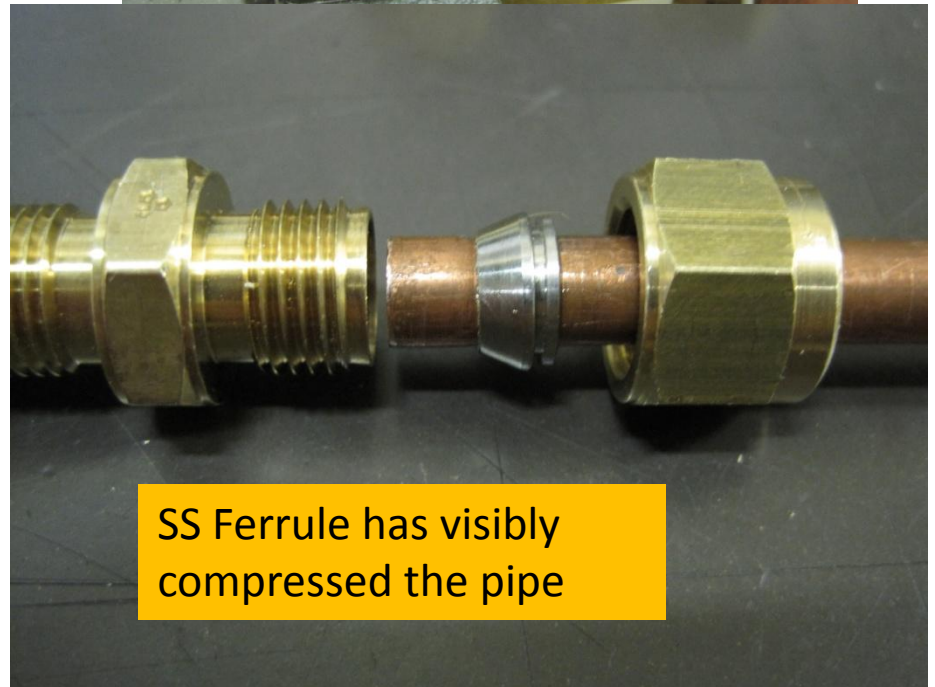


Sagana unions assembly

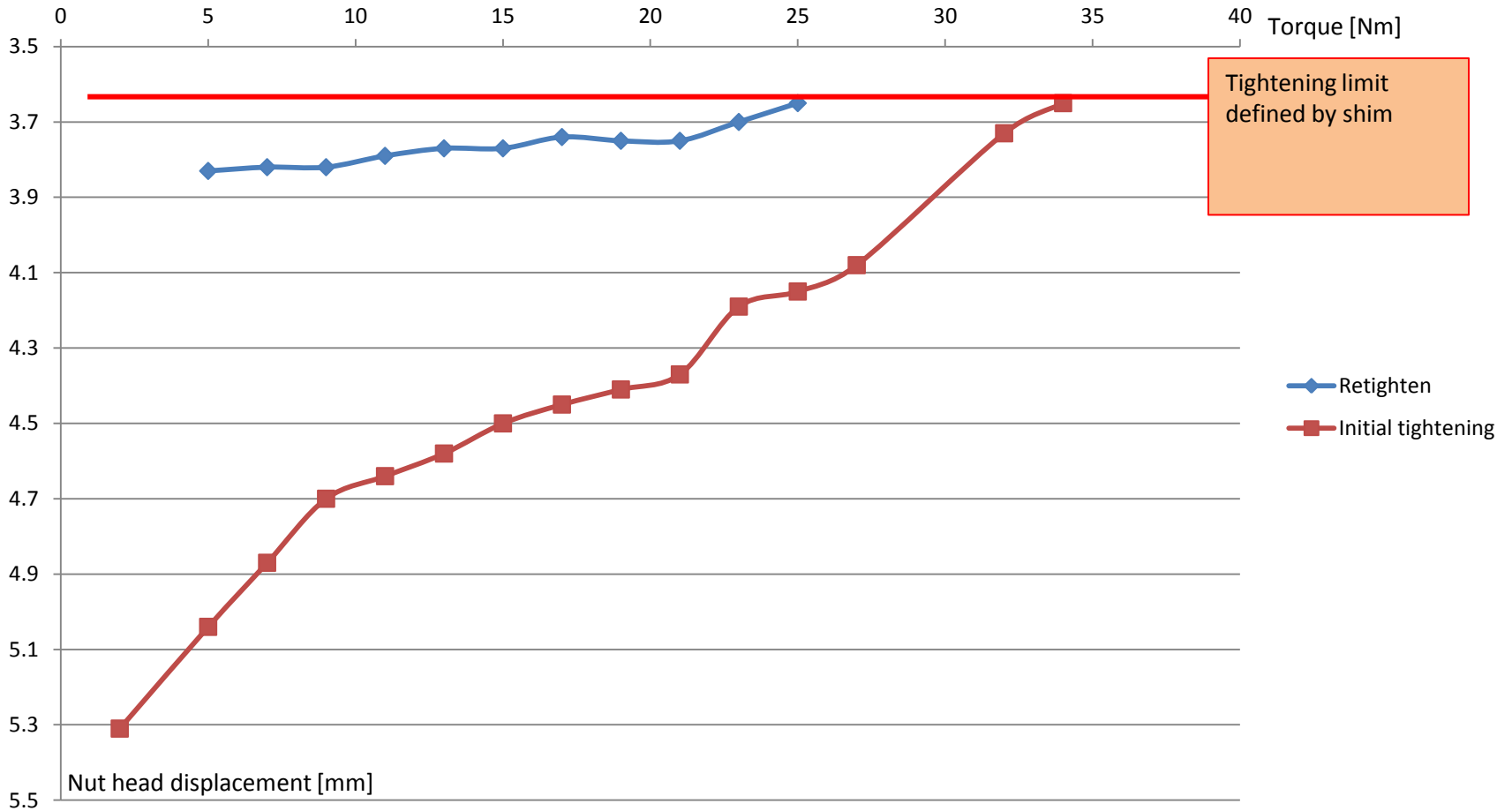
Sagana Double Union 8mm dia.



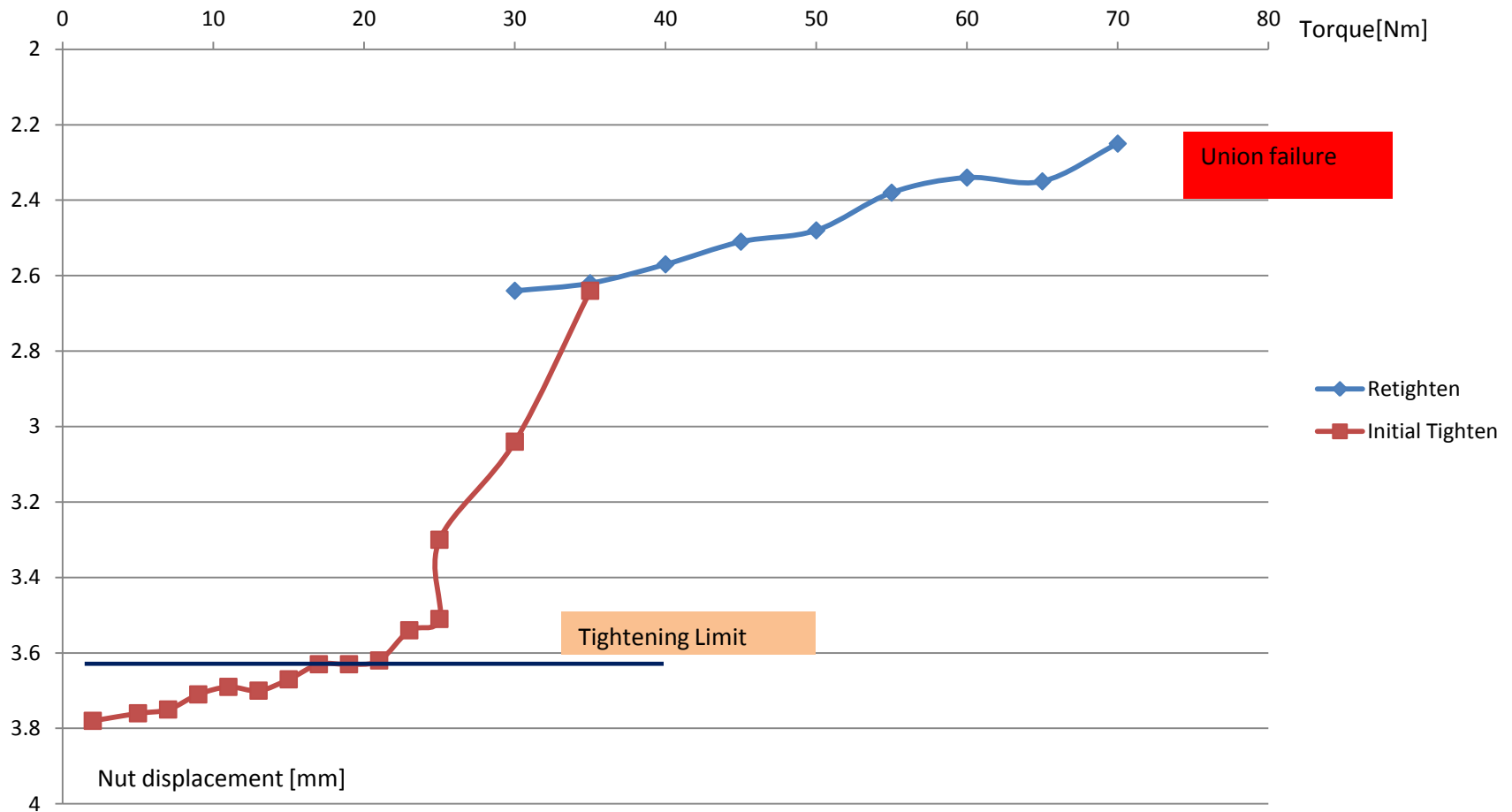
Unions, tools and tests



Sagana Tightening Torques

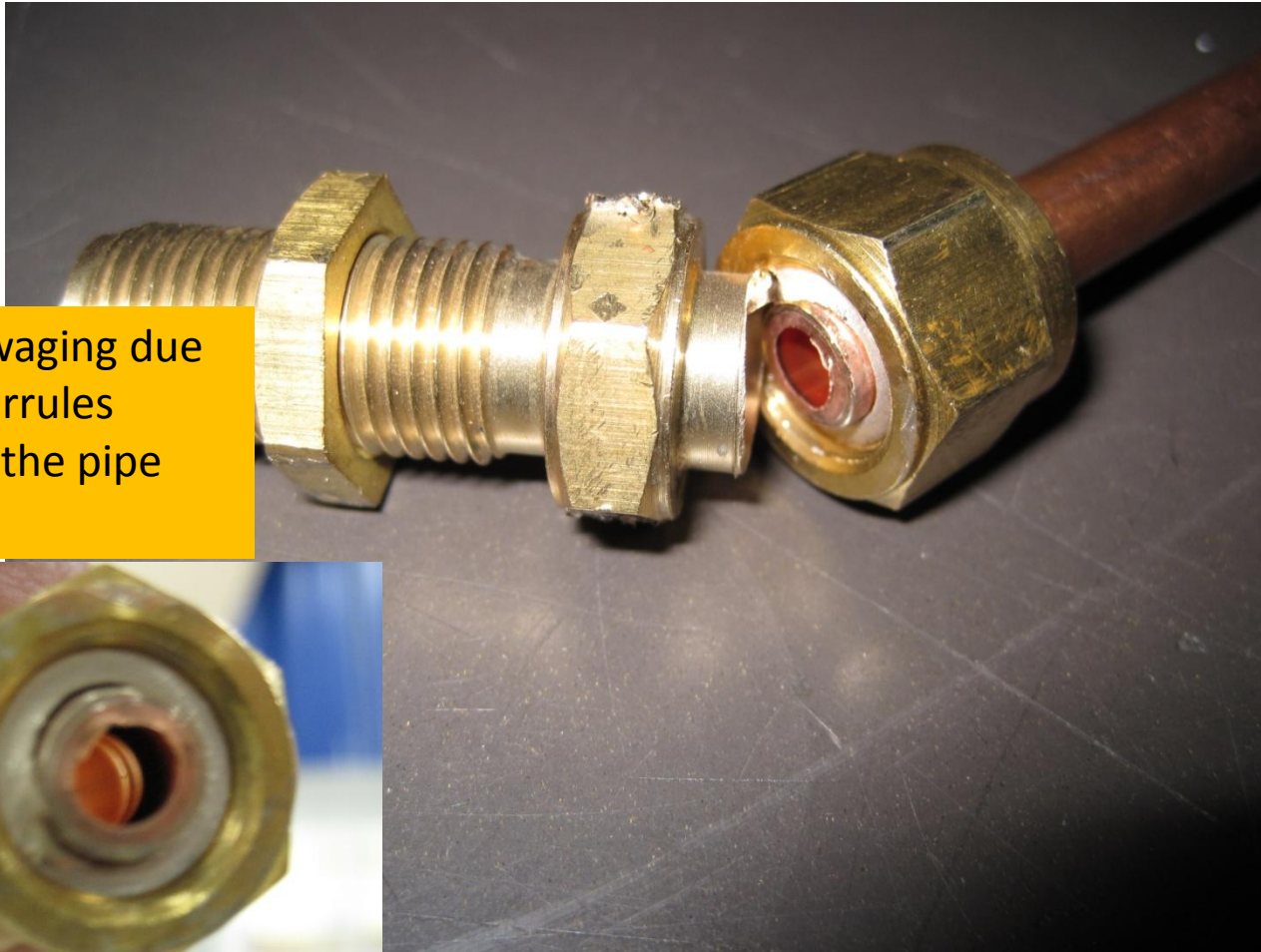


Union failure at 40% excess turns, requiring x3 torque.



Union failure due to excess tightening

Double swaging due to both ferrules acting on the pipe ext. dia.



Compatibility Materials Sheet

Pipe type	Hardness Scales				Tensile Strength [Mpa]
	Vickers		Brinell	Rockwell	
	HV5	HV10	HB	HRB	
Indian spec pipe Cu	80-100	80-100	76-95		245-325
CERN 1/2 Hard Cu		70-95	67-90		250-300
CERN annealed Cu		40-65	38-62		
CERN SS		225	215	96	500
Sagana brass		<63	<60	Poor correlation	
Sagana SS		<147	<147	<80	

Conclusion

- Do the assembly with care and the correct tools