



13\_031113\_CLN\_01.doc

***TO: DISTRIBUTION***

***FROM: C NEUMEYER***

***SUBJECT: TF TORQUE COLLAR WET LAY-UP SHEAR STRENGTH, REVISED***

This memo supercedes a prior one (13\_031113\_CLN\_01.doc ) on the same subject, based on revised values of modulus measured for the wet lay-up, and calculated peak/average ratio of the test samples.

The following table shows the E120-HP wet lay-up shear data<sup>1</sup> including the final results from group 6 (G6).

	Normal Stress (psi)	Shear Failure Stress (psi)
G4	232	2876
G4	240	2921
G4	287	2521
G5	301	3037
G5	363	2651
G5	994	3946
G5	1002	4429
G6-1	1018	2935
G6-2	1018	3610
G6-12	1125	3220
G5	1999	5191
G5	2004	5069
G6-4	2036	4104
G6-3	2075	3632
G6-5	3131	4259
G6-11	3878	4244
G6-7	4099	4398
G6-6	4114	4629
G6-8	5011	4223
G6-10	5365	4881
G6-9	5438	4251

<sup>1</sup> Data supplied by T Kozub, see final test report

A fit was made to the minimum of the data, and then a peak equivalent to that fit based on the 1.2 peak-to-average applied to the zero compression value<sup>2</sup>. This result is shown superimposed, along with the prior assumption. The equation for the peak fit is...

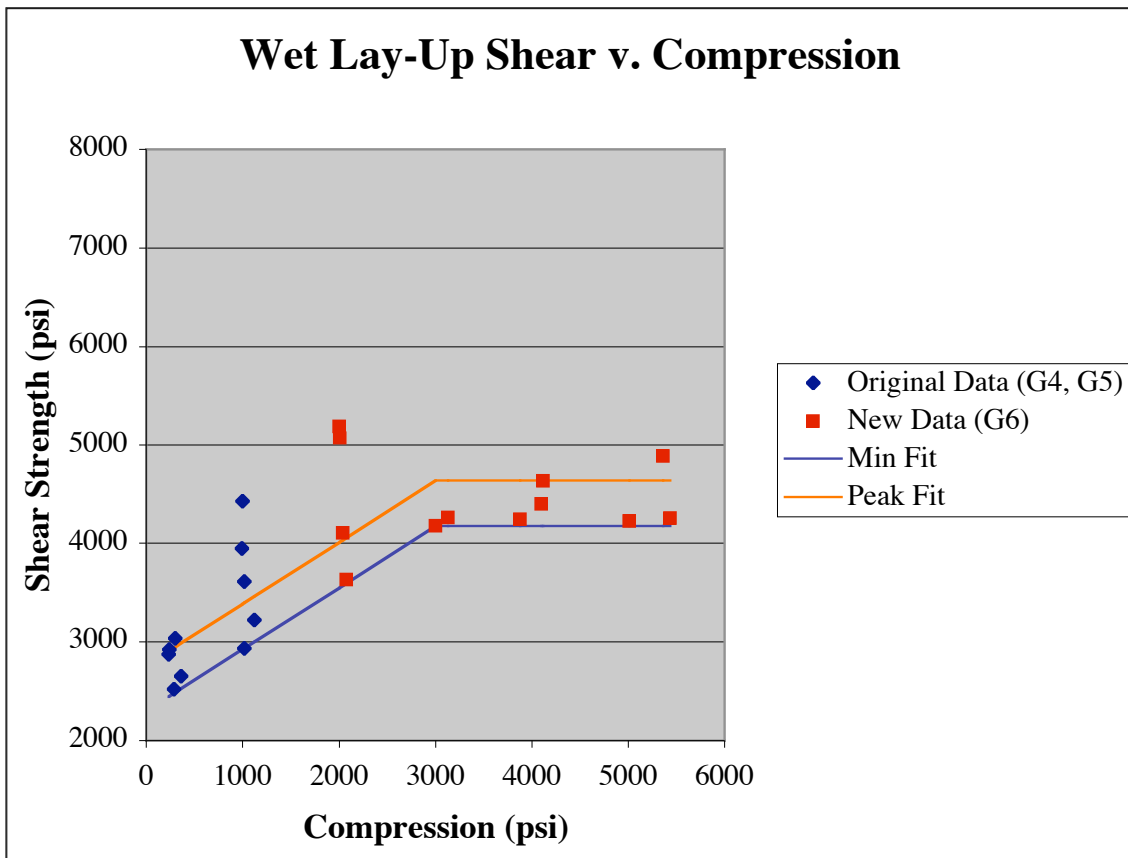
For compression  $\leq 3000$  psi....

$$\text{Shear Stress} = 1.2 * 2300 + 0.625 * |\text{Compression}| = 2760 + 0.625 * |\text{Compression}|$$

For compression  $> 3000$  psi....

$$\text{Shear Stress} = 1.2 * 2300 + 0.625 * 3000 = 4635$$

...where shear and compression are in psi.



Safety factor calculations shall be based on the peak fit curve as shown.

Cc: P Heitzenroeder      C Jun      M Kalish      T Kozub      I Zatz

<sup>2</sup> E-mail from C. Jun, 11/13/3