SUPPLEMENTARY MATERIAL S2. DESCRIPTIVE STATISTICS OF THE RESULTS

Standard Deviation (SD) and the Coefficients of Variation (CV) were calculated to determine the consistency of the results. A distribution with a smaller CV is considered as more consistent than the other. We calculated Standard Deviation (SD) and the Coefficients of Variation (CV) by:

$$S.D = \sqrt{\frac{\sum_{i=1}^{n}\left(X_i - \bar{X}\right)^2}{n-1}} \quad (1)$$

$$C.V = \frac{S.D}{\bar{X}} * 100\% \quad (2)$$

Where; X_i is one sample value; $\bar{X}$ is the sample mean; n is the sample size.

1. Effect of nano-TiO_2 and nano-SiO_2 particle size on Shear bond strength

Particle Size (nm)	Nanoparticle content (%)	Curing time (days)	X_i (MPa)	X_i (MPa)	X_i (MPa)	Mean ($\bar{X}$) (MPa)	SD	Coefficient of variation, CV (%)
CO	0	3	0.032	0.039	0.035	0.035	0.003	9.9
		7	0.045	0.050	0.049	0.048	0.002	5.5
		14	0.058	0.065	0.060	0.061	0.003	5.9
		28	0.099	0.105	0.120	0.108	0.009	10.0
NT	1	3	0.102	0.109	0.116	0.109	0.006	6.4
		7	0.117	0.127	0.125	0.123	0.004	4.3
		14	0.142	0.134	0.141	0.139	0.004	3.1
		28	0.241	0.251	0.246	0.246	0.004	2.0
	2	3	0.132	0.150	0.138	0.140	0.007	6.5
		7	0.194	0.201	0.196	0.197	0.005	3.0
		14	0.299	0.309	0.310	0.306	0.008	3.1
		28	0.465	0.467	0.484	0.472	0.009	2.2
	3	3	0.202	0.208	0.211	0.207	0.004	2.2
		7	0.285	0.278	0.286	0.283	0.004	1.9
		14	0.376	0.372	0.392	0.380	0.009	2.8
		28	0.508	0.505	0.496	0.503	0.011	2.7
	4	3	0.189	0.194	0.205	0.196	0.007	4.1
		7	0.247	0.251	0.228	0.242	0.010	5.0
		14	0.291	0.311	0.289	0.297	1.010	4.0
		28	0.345	0.335	0.337	0.339	0.006	2.3
NS	1	3	0.122	0.119	0.116	0.119	0.002	2.5
		7	0.128	0.134	0.131	0.131	0.002	2.3
		14	0.143	0.145	0.150	0.146	0.003	2.1
		28	0.250	0.258	0.257	0.255	0.004	1.7
	2	3	0.147	0.153	0.153	0.151	0.003	2.3
		7	0.208	0.202	0.211	0.207	0.004	2.2
		14	0.312	0.313	0.321	0.315	0.004	1.6
		28	0.502	0.514	0.511	0.509	0.005	1.2

	3	3	0.214	0.221	0.225	0.220	0.005	2.5
		7	0.295	0.287	0.288	0.290	0.004	1.5
		14	0.405	0.407	0.392	0.401	0.007	2.0
		28	0.548	0.561	0.550	0.553	0.006	1.3
	4	3	0.213	0.201	0.210	0.208	0.005	3.0
		7	0.275	0.290	0.284	0.283	0.006	2.3
		14	0.315	0.306	0.303	0.308	0.005	2.0
		28	0.359	0.361	0.375	0.365	0.007	2.4

The results show that the degree of variability relative to the mean value for the shear bond strength values was about 1.2-10%, indicating good results.

2. Rheological measurements

The laboratory measurements of the rheological parameters were conducted according to the API RP10B guideline. Readings were recorded first in ascending order and then in descending order at various rotational speeds. The measurements are reported as **an average of the ramp-up and ramp-down readings**. The flow behavior index (n) and consistency coefficient (k) of the slurry was calculated as follows:

$$n = 2.096 \log\left(\frac{\theta_{300}}{\theta_{100}}\right) \qquad (3)$$

$$k = \frac{0.511\theta_{300}}{511^{n}} \qquad (4)$$

Where θ_{300} is the average reading at a shear rate of 300 rpm, and θ_{100} is the average reading at the shear rate of 100 rpm.

A. Data from a rheological properties test for NT particles

NT	Ramp-up readings (rpm)						Ramp-down readings (rpm)					
(%)	600	300	200	100	6	3	600	300	200	100	6	3
0	132	90	78	60	21	15	136	96	84	66	25	19
1	164	121	85	80	19	15	168	125	94	92	23	21
2	237	150	123	103	25	17	245	160	128	113	29	23
3	242	162	135	112	29	22	253	174	143	121	33	28
4	253	162	139	113	32	24	257	174	145	123	36	29

The Coefficients of Variation (CV) for a rheological properties test for NT

$\bar{X}\_\theta_{100}$ rpm	SD θ_{100}	CV (%)	$\bar{X}\_\theta_{300}$ rpm	SD θ_{300}	CV (%)
63	3	7	93	3	5
85	6	10	123	5	6
108	5	7	155	5	5
117	5	5	168	6	5
118	3	6	168	6	5

B. Data from a rheological properties test for NS particles

NT	Ramp-up readings (rpm)						Ramp-down readings (rpm)					
(%)	600	300	200	100	6	3	600	300	200	100	6	3
0	132	90	78	60	21	15	136	96	84	66	25	19
1	165	121	105	84	28	19	169	129	115	88	33	24
2	142	105	95	75	27	20	154	113	98	79	32	27
3	135	102	93	73	29	23	142	105	97	77	35	28
4	117	90	89	70	33	25	127	93	94	72	37	27

The Coefficients of Variation (CV) for a rheological properties test for NS

$\bar{X}\_\theta_{100}$ rpm	SD θ_{100}	CV (%)	$\bar{X}\_\theta_{300}$ rpm	SD θ_{300}	CV (%)
63	3	7	93	3	5
85	6	10	112	5	6
107	5	7	153	5	5
115	5	6	167	7	6
117	5	6	168	7	6