

Supplementary: Experimental stress analysis results by components

Part Code: RDM165-A-004		IN-GARAGE TESTS		ROAD TESTS																	
				ASPHALT ROAD						DIRT ROAD						IN-FIELD ROAD					
		Transportation position Static Linkage		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03	
Strain-Gauge No	Test Values	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)
SG-01	Max.	16.150	0.365	31.980	1.738	34.287	1.242	36.538	4.645	34.993	1.018	37.614	3.884	45.865	10.506	46.442	3.196	48.800	1.631	45.194	3.999
	Min.	14.620	0.156	14.203	2.573	18.193	0.561	10.741	2.493	17.035	2.938	15.386	1.674	10.689	3.563	18.708	3.199	13.980	1.013	14.374	0.328
	Average	15.355	0.282	22.613	0.197	23.820	0.376	23.124	1.678	25.405	0.993	25.784	0.352	25.743	0.646	27.161	2.369	27.854	2.549	27.291	1.467
SG-02	Max.	9.723	0.080	19.358	1.351	18.651	1.106	21.535	2.223	19.687	1.078	21.203	0.710	22.675	5.090	20.932	4.331	25.441	1.146	20.529	2.114
	Min.	8.798	0.171	9.627	1.462	10.074	0.248	6.964	1.246	10.216	1.400	9.962	0.583	7.154	2.471	9.153	1.411	10.559	0.914	10.884	0.615
	Average	9.320	0.091	14.720	0.254	14.299	0.056	14.612	0.219	14.878	0.109	15.342	0.014	15.534	0.157	11.827	0.443	15.888	0.648	14.210	0.119
SG-03	Max.	10.215	0.032	27.093	1.525	25.879	1.382	31.183	2.757	28.018	1.825	30.763	0.926	37.144	5.934	40.040	9.819	45.765	5.204	40.261	2.453
	Min.	8.851	0.360	14.714	1.756	14.992	0.283	11.877	1.551	15.460	1.852	15.159	0.794	12.048	3.177	22.101	3.176	20.529	3.114	21.594	1.047
	Average	9.708	0.124	21.031	0.337	20.256	0.078	21.350	0.193	21.328	0.299	22.155	0.073	22.478	0.352	27.662	0.218	28.449	0.176	27.683	0.074

Max. equivalent stress value

Part Code: RDM165-B-003		IN-GARAGE TESTS		ROAD TESTS																	
				ASPHALT ROAD						DIRT ROAD						IN-FIELD ROAD					
		Transportation position Static Linkage		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03	
Strain-Gauge No	Test Values	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)
SG-01	Max.	8.101	0.160	13.098	3.505	13.545	2.271	14.680	2.941	14.561	2.067	15.490	3.086	15.617	0.718	23.626	1.032	24.584	3.250	26.234	2.714
	Min.	7.019	0.137	6.949	2.593	5.802	0.815	8.420	0.965	5.875	0.851	5.951	1.185	5.130	0.265	13.756	2.847	16.603	0.295	14.445	0.998
	Average	7.464	0.145	10.405	1.146	9.563	0.097	11.570	0.527	10.288	0.071	10.423	0.128	9.932	0.142	20.395	0.194	20.263	0.079	20.424	0.202
SG-02	Max.	9.377	0.109	17.959	3.825	15.489	0.831	20.034	2.136	19.620	0.755	21.245	2.898	20.161	1.151	31.753	2.588	29.293	0.623	31.887	1.875
	Min.	8.791	0.024	10.117	0.111	10.058	0.012	10.388	0.153	11.006	0.248	11.397	0.863	11.535	0.395	22.671	1.395	22.768	0.889	21.956	0.731
	Average	9.078	0.080	11.879	0.523	11.395	0.049	12.752	0.218	14.343	0.203	14.879	0.244	15.082	0.154	26.443	0.070	26.540	0.077	26.576	0.102
SG-03	Max.	11.573	0.120	28.920	0.240	28.698	0.507	29.578	0.642	40.478	0.312	40.856	0.385	40.518	0.103	41.621	1.298	46.331	2.033	42.841	0.520
	Min.	11.060	0.021	26.351	0.173	26.620	0.121	26.522	0.426	38.104	0.171	38.174	0.228	38.299	0.153	36.993	0.623	35.293	0.695	35.698	1.246
	Average	11.241	0.031	27.371	0.028	27.480	0.233	28.013	0.089	39.091	0.113	38.335	0.076	39.278	0.017	38.134	0.025	39.530	0.257	38.261	0.045
SG-04	Max.	14.882	0.022	41.222	0.726	43.573	1.460	42.997	3.537	45.581	1.415	44.645	1.323	45.714	3.454	46.365	0.166	44.226	0.806	46.481	3.143
	Min.	13.150	0.341	37.107	0.148	36.415	0.132	36.213	0.174	32.783	1.102	33.689	1.010	32.130	1.393	35.251	0.292	35.403	0.954	35.101	1.747
	Average	14.333	0.086	38.242	0.088	38.651	0.166	38.505	1.440	38.585	0.997	38.836	0.143	38.886	0.429	39.390	0.177	39.394	0.102	39.615	0.100
SG-05	Max.	14.768	0.167	26.439	3.300	25.867	0.919	29.205	3.506	25.972	2.403	26.003	1.744	29.211	5.055	60.894	0.911	61.798	4.549	62.010	0.627
	Min.	13.740	0.225	7.557	2.241	7.524	1.734	4.624	2.748	5.457	2.537	7.400	1.990	3.462	3.207	45.285	2.515	47.936	2.353	46.581	1.509
	Average	14.285	0.246	16.476	0.091	16.057	0.116	16.321	0.401	15.609	0.068	15.429	0.127	15.492	0.141	54.862	0.213	54.463	0.155	55.023	0.321
SG-06	Max.	14.295	0.239	20.280	1.785	21.705	4.085	23.782	1.291	21.253	1.266	21.414	0.853	25.019	5.155	26.328	1.934	29.424	6.422	31.743	4.024
	Min.	13.022	0.152	6.023	2.763	7.232	1.565	4.578	2.890	6.286	3.096	8.219	0.645	5.635	2.345	4.017	3.153	7.719	3.041	8.592	5.673
	Average	13.605	0.024	13.601	0.058	13.458	0.241	13.878	0.772	14.281	0.167	14.462	0.121	14.678	0.204	17.483	0.522	18.038	0.182	18.870	1.287
SG-07	Max.	9.253	1.000	38.705	1.214	38.052	0.854	38.682	1.372	38.825	0.659	38.455	1.070	38.895	1.333	48.537	1.392	47.336	1.015	47.638	0.584
	Min.	6.321	0.453	32.503	1.039	31.534	0.559	33.173	0.630	33.729	0.235	32.538	0.462	33.068	0.347	41.482	0.726	37.960	0.641	39.222	1.523
	Average	7.368	0.653	35.489	0.858	34.903	0.489	35.820	0.616	36.214	0.325	34.697	0.124	35.621	0.098	44.188	0.483	43.440	0.258	43.367	0.216

Max. equivalent stress value

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				ASPHALT ROAD						DIRT ROAD						IN-FIELD ROAD					
		Transportation position Static Linkage		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03		Tractor Speed-01		Tractor Speed-02		Tractor Speed-03	
Strain-Gauge No	Test Values	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)	Equivalent Stress (MPa)	Standard Deviation (±)
SG-01	Max.	17.781	5.100	18.671	1.242	19.123	0.590	20.475	0.162	18.725	0.265	19.721	1.074	19.917	1.809	34.978	1.460	31.498	0.048	33.183	2.393
	Min.	1.406	2.975	2.795	0.390	10.510	0.073	5.294	0.096	3.089	0.329	13.472	0.760	2.700	0.597	29.704	0.423	29.204	0.102	25.880	0.325
	Average	10.944	4.901	15.461	0.263	15.220	0.226	16.600	0.088	15.611	0.167	15.851	0.127	15.988	0.092	31.446	0.398	30.425	0.170	29.411	0.171
SG-02	Max.	16.797	4.817	27.261	5.744	31.238	4.277	37.267	2.960	47.406	4.398	48.949	1.799	47.377	9.651	54.250	3.581	54.520	6.258	56.979	3.565
	Min.	9.556	4.054	13.758	7.059	2.827	10.967	17.600	1.761	14.997	7.156	8.250	9.390	3.493	24.661	14.010	3.058	15.707	3.286	22.964	4.893
	Average	10.915	4.199	23.083	2.319	27.108	2.654	24.914	0.207	35.111	0.119	34.315	0.615	30.444	3.267	31.346	0.913	37.907	0.776	38.421	0.279
SG-03	Max.	11.734	1.222	32.305	2.990	36.693	1.246	34.362	3.537	38.573	2.651	37.924	5.778	35.142	20.678	37.045	1.416	38.750	1.065	37.657	0.509
	Min.	7.686	0.908	9.361	3.733	21.224	3.769	15.792	2.593	13.084	5.256	16.616	4.882	12.666	4.505	33.016	2.588	22.997	4.644	25.010	3.091
	Average	9.131	0.817	20.798	1.204	29.325	0.279	27.935	1.015	31.201	0.281	26.767	0.174	25.936	0.292	31.370	0.101	32.714	0.365	31.585	0.606
SG-04	Max.	15.136	2.789	37.679	1.824	37.785	3.156	36.126	2.004	35.087	2.060	34.709	2.468	36.244	2.633	45.814	1.664	47.566	1.114	45.875	0.835
	Min.	8.575	2.367	32.228	1.675	30.501	0.700	38.329	0.969	28.032	0.608	35.856	1.984	23.607	3.880	39.883	1.957	38.504	1.356	38.471	1.344
	Average	11.137	2.472	34.982	0.787	33.451	0.687	31.782	0.711	31.377	0.214	30.227	0.096	29.658	0.386	43.746	1.391	44.016	1.384	42.697	0.109
SG-05	Max.	17.483	0.313	18.664	2.156	19.480	1.251	26.061	3.471	21.361	3.092	26.218	2.682	26.717	4.374	46.213	2.192	46.525	0.579	48.999	1.214
	Min.	15.463	0.419	10.412	0.953	9.461	1.329	8.768	1.191	7.465	0.372	5.819	0.802	4.394	0.789	37.650	1.993	37.157	0.692	33.933	1.644
	Average	16.499	0.283	14.007	0.198	13.555	0.519	16.143	1.258	12.989	0.862	13.071	0.325	13.320	0.445	42.600	0.734	43.362	0.122	44.476	0.035
SG-06	Max.	16.285	0.310	15.005	0.849	14.961	0.164	15.087	1.573	14.226	1.935	16.638	1.423	17.306	3.470	44.636	3.480	45.619	1.783	46.972	2.761
	Min.	14.067	0.328	10.945	0.445	10.034	0.975	10.360	0.711	8.803	0.213	7.833	0.683	6.630	0.241	31.277	2.794	30.191	0.324	27.845	1.276
	Average	15.140	0.256	12.623	0.073	11.991	0.484	13.330	0.610	10.866	0.774	10.546	0.299	9.911	0.383	38.072	0.997	38.378	0.064	39.909	0.183
SG-07	Max.	14.855	4.000	24.237	2.195	28.002	3.260	22.261	1.832	21.143	1.062	21.111	0.856	22.431	1.537	40.480	1.558	41.425	1.210	39.978	0.845
	Min.	6.463	3.780	15.382	1.526	13.573	1.402	15.415	0.516	11.416	0.242	11.259	0.732	9.719	2.063	34.920	1.009	32.590	2.442	34.363	1.126
	Average	11.559	3.961	19.599	0.767	19.653	0.376	17.905	0.535	16.028	0.265	16.596	0.144	14.856	0.228	37.361	1.015	37.881	0.972	37.259	0.040