

EXHIBIT 1

Fiberglass Entry Door
Energy Star 2015 Compliance

Study of a fiberglass door which has an unglazed U-factor of 0.16.

This data will be posted in the CPD.

Legend
Meets '15 E-Star
Fails '15 E-Star

Inswing & Outswing Entry Door	IG	Glazing	Needs 0.25 / 0.25 or less for U & SHGC				Needs U <0.30 & SHGC < 0.25, for all 4 climate zones						
			1/4 Lite		1/2 Lite		1/2 Lite Changes Needed	3/4 Lite		3/4 Lite Changes Needed	Full Lite		Full Lite Changes Needed
			U-Factor	SHGC	U-Factor	SHGC		U-Factor	SHGC		U-Factor	SHGC	
1/2" ovals & round tops (duraseal)		Clear, 1-lite	0.23	0.12	0.29	0.20	Upgrade to 1" IG.						Upgrade to 1" IG.
		Low-E, Hardcoat, 1-lite	0.22	0.10	0.26	0.17							
		Clear w/Grids	0.23	0.11	0.29	0.18							
		Low-E w/Grids, Hardcoat	0.22	0.09	0.26	0.15							
1/2" Rectangles, with Intercept		Clear, 1-lite	0.23	0.12	0.29	0.20	Upgrade to 1" IG.	0.33	0.26	Add hardcoat Low-E.	0.38	0.34	Upgrade to 1" IG.
		Low-E, Hardcoat, 1-lite	0.22	0.10	0.26	0.17		0.29	0.22	ok	0.33	0.28	
		Clear w/ Ext. Grids	0.23	0.11	0.29	0.18		0.33	0.23	Add hardcoat Low-E.	0.38	0.30	
		Low-E w/ Ext. Grids, Hardcoat	0.22	0.09	0.26	0.15		0.29	0.19	ok	0.33	0.25	
1" ovals & round tops (duraseal)		Clear, 1-lite	0.23	0.12	0.27	0.20	Add hardcoat Low-E						
		Low-E, Hardcoat, 1-lite	0.21	0.10	0.24	0.17	ok						
		Clear w/Grids	0.23	0.11	0.27	0.18	Add hardcoat Low-E						
		Low-E w/Grids, Hardcoat	0.21	0.09	0.24	0.15	ok						
1" Rectangles, with Intercept		Clear, 1-lite	0.23	0.12	0.28	0.20	Add hardcoat Low-E.	0.31	0.26	add hardcoat	0.36	0.34	Upgrade to softcoat LowE.
		Low-E, Harcoat, 1-lite	0.21	0.10	0.24	0.17	ok	0.27	0.22	ok	0.30	0.28	Upgrade to softcoat LowE.
		Low-E, Softcoat, 1-lite						0.26	0.13	ok, overkill	0.29	0.16	ok
		Clear w/GBG grids	0.23	0.11	0.28	0.18	Add hardcoat Low-E.	0.31	0.23	Add hardcoat Low-E.	0.36	0.30	Add hardcoat Low-E.
		Low-E w/GBG grids, Hardcoat	0.21	0.09	0.24	0.15	ok	0.27	0.19	ok	0.30	0.25	ok
Dual-glazed Blinds		Clear w/Blinds	.23/.21	.12/.03	.28/.25	.20/.05	Add Low-E.	.32/.27	.26/.06	Add Low-E.	.36/.30	.34/.07	Add Soft Low-E.
		Low-E w/Blinds, Softcoat	.21/.21	.06/.02	.24/.23	.10/.04	ok	.27/.25	.13/.05	ok	.30/.27	.16/.07	ok
Triple-Glazed Blinds		Clear 1-Lite			.22/.21	.18/.06	ok				.26/.23	.31/.10	Add grids & Low-E
		Clear w Grids			.22/.20	.16/.05	ok				.26/.23	.27/.09	Add grids & Low-E
		Low-E Harcoat 1-Lite			.20/.19	.15/.06	Ok. Low-E is overkill.				.23/.21	.22/.10	ok
		Low-E Hardcoat w/Grids			.20/.19	.14/.06	Ok. Low-E is overkill.				.23/.21	.23/.09	ok
Deco Glass		Deco/Clear	0.21	0.10	0.25	0.16	ok	0.27	0.21	ok	0.31	0.27	Add Soft Low-E.
		Deco/ LowE	0.20	0.08	0.23	0.14	ok	0.25	0.18	ok	0.29	0.23	ok
		Deco, Softcoat Low-E	0.20	0.05	0.23	0.08	ok	0.25	0.10	ok	0.28	0.13	ok
Vent		Clear, 1-lite, duraseal			0.28	0.20	Add hardcoat Low-E.						
		Clear, GBG, box alum			0.29	0.18	Can't achieve E-Star						
		Low-E hardcoat 1-lite, duraseal			0.25	0.17	ok						
		Low-E Hardcoat GBG, box alum			0.27	0.15	Can't achieve E-Star						
Internal Wrought Iron		Clear	0.23	0.10	0.29	0.18	Can't achieve E-Star	0.32	0.23	Add Low-E.	0.37	0.29	Can't achieve E-Star
		Low-E, Hardcoat	0.22	0.09	0.26	0.15	Can't achieve E-Star	0.28	0.20	ok	0.32	0.26	
Severe Weather, w lami glass		Clear, 1-Lite, Intercept	0.24	0.11	0.29	0.18	Can't achieve E-Star	0.33	0.23	Can't achieve E-Star	0.37	0.30	None of these meet E-Star.
		Low-E, 1-lite	0.24	0.09	0.29	0.15		0.33	0.19		0.38	0.25	
		Clear w/GBG grids	0.24	0.09	0.29	0.16		0.33	0.20		0.38	0.26	
		Low-E, w/GBG grids	0.24	0.08	0.29	0.13		0.33	0.17		0.38	0.22	
		Seaturtle Glass,	0.24	0.08	0.29	0.13		0.33	0.17		0.37	0.22	
		Blinds, clear			.29/.26	.18/.05					.38/.33	.30/.07	
		Blinds, Low-E			.30/.26	.15/.04					.39/.33	.25/.07	
		Deco, clear	0.23	0.08	0.27	0.14		0.31	0.18		0.35	0.23	
		Internal Wrought Iron						0.32	0.20		0.37	0.26	
Embossed	na	U-Factor = 0.16 SHGC = 0.00											
Flush	na	U-Factor = 0.16 SHGC - 0.00											