

NFRC Product Certification Authorization Report



Manufacturer: MGM Industries	Product Series: 4650 / 4680 Double Hung	Simulation Lab: SATI	Initial Cert. Date: 06/03/2009
Street: 287 Free Hill Road	Product Type: VSDH	Sim. Report #: A4532.09-116-45	Re-Certification Date: 10/06/2011
City/State/Zip: Hendersonville, TN 37075	Air Leakage:	Sim. Report Date: 09/08/2011	Revised Date: 09/08/2011
Print Date: 10/06/2011		Test Date: 11/22/2010	Expiration Date: 11/22/2014

CPD Number: MGM-A-22

IA: American Architectural Manufacturers Association

Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Lyr	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
	00012-00001	4650 DH: CLR/AIR/CLR (2mm/2mm) 1"	VY/VY	2		0.813	CU-D	Fill 1: AIR (100)	N		CL	0.47	0.60	0.63	41
	00012-00002	4650 DH: CLR/AIR/CLR (2mm/2mm) 1"	VY/VY	2		0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.47	0.54	0.56	41
	00012-00003	4650 DH: CLR/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	N		CL	0.47	0.59	0.62	41
	00012-00004	4650 DH: CLR/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.47	0.53	0.55	41
	00012-00005	4650 DH: GRY/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	N		GY	0.47	0.46	0.42	41
	00012-00006	4650 DH: GRY/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.47	0.41	0.37	41
	00012-00007	4650 DH: BRZ/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.47	0.48	0.46	41
	00012-00008	4650 DH: BRZ/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.47	0.43	0.41	41
	00013-00001	4650 DH: CLR/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.45	0.58	0.61	42
	00013-00002	4650 DH: CLR/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.45	0.52	0.55	42
	00013-00003	4650 DH: GRY/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.45	0.46	0.42	42
	00013-00004	4650 DH: GRY/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.45	0.41	0.37	42
	00013-00005	4650 DH: BRZ/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.45	0.48	0.46	42
	00013-00006	4650 DH: BRZ/ARG/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.45	0.43	0.41	42
	00014-00001	4650 DH: E270/AIR/CLR (2mm/2mm) 1"	VY/VY	2	0.037(2)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.28	0.53	50
	00014-00002	4650 DH: E270/AIR/CLR (2mm/2mm) 1"	VY/VY	2	0.037(2)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.26	0.47	50
	00014-00003	4650 DH: CLR/AIR/E270 (2mm/2mm) 1"	VY/VY	2	0.037(3)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.35	0.53	50
	00014-00004	4650 DH: CLR/AIR/E270 (2mm/2mm) 1"	VY/VY	2	0.037(3)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.32	0.47	50
	00014-00005	4650 DH: E270/AIR/CLR (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.28	0.53	50
	00014-00006	4650 DH: E270/AIR/CLR (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.25	0.47	50
	00014-00007	4650 DH: E270/AIR/GRY (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.35	0.27	0.36	50
	00014-00008	4650 DH: E270/AIR/GRY (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.35	0.25	0.32	50
	00014-00009	4650 DH: E270/AIR/BRZ (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.35	0.27	0.40	50
	00014-00010	4650 DH: E270/AIR/BRZ (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.35	0.25	0.35	50

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	00014-00011	4650 DH: CLR/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.35	0.53	50	
	00014-00012	4650 DH: CLR/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.32	0.47	50	
	00014-00013	4650 DH: GRY/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.35	0.27	0.36	50	
	00014-00014	4650 DH: GRY/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.35	0.24	0.32	50	
	00014-00015	4650 DH: BRZ/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.35	0.28	0.40	50	
	00014-00016	4650 DH: BRZ/AIR/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.35	0.25	0.35	50	
	00015-00001	4650 DH: E270/ARG/CLR (2mm/2mm) 1"	VY/VY	2	0.037(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.28	0.53	53	
	00015-00002	4650 DH: E270/ARG/CLR (2mm/2mm) 1"	VY/VY	2	0.037(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.25	0.47	53	
	00015-00003	4650 DH: CLR/ARG/E270 (2mm/2mm) 1"	VY/VY	2	0.037(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.36	0.53	53	
	00015-00004	4650 DH: CLR/ARG/E270 (2mm/2mm) 1"	VY/VY	2	0.037(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.32	0.47	53	
	00015-00005	4650 DH: E270/ARG/CLR (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.28	0.53	53	
	00015-00006	4650 DH: E270/ARG/CLR (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.25	0.47	53	
	00015-00007	4650 DH: E270/ARG/GRY (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.31	0.27	0.36	53	
	00015-00008	4650 DH: E270/ARG/GRY (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.31	0.25	0.32	53	
	00015-00009	4650 DH: E270/ARG/BRZ (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.31	0.27	0.40	53	
	00015-00010	4650 DH: E270/ARG/BRZ (3mm/3mm) 1"	VY/VY	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.31	0.25	0.35	53	
	00015-00011	4650 DH: CLR/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.35	0.53	53	
	00015-00012	4650 DH: CLR/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.32	0.47	53	
	00015-00013	4650 DH: GRY/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.31	0.26	0.36	53	

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	00015-00014	4650 DH: GRY/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.31	0.24	0.32	53
	00015-00015	4650 DH: BRZ/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.31	0.28	0.40	53
	00015-00016	4650 DH: BRZ/ARG/E270 (3mm/3mm) 1"	VY/VY	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.31	0.25	0.35	53
	00016-00001	4650 DH: E366/AIR/CLR (2mm/2mm) 1"	VY/VY	2	0.022(2)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.21	0.49	50
	00016-00002	4650 DH: E366/AIR/CLR (2mm/2mm) 1"	VY/VY	2	0.022(2)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.19	0.44	50
	00016-00003	4650 DH: CLR/AIR/E366 (2mm/2mm) 1"	VY/VY	2	0.022(3)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.30	0.49	50
	00016-00004	4650 DH: CLR/AIR/E366 (2mm/2mm) 1"	VY/VY	2	0.022(3)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.27	0.44	50
	00016-00005	4650 DH: E366/AIR/CLR (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.21	0.49	50
	00016-00006	4650 DH: E366/AIR/CLR (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.19	0.43	50
	00016-00007	4650 DH: E366/AIR/GRY (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.35	0.20	0.33	50
	00016-00008	4650 DH: E366/AIR/GRY (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.35	0.18	0.30	50
	00016-00009	4650 DH: E366/AIR/BRZ (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.35	0.21	0.37	50
	00016-00010	4650 DH: E366/AIR/BRZ (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.35	0.19	0.33	50
	00016-00011	4650 DH: CLR/AIR/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.35	0.30	0.49	50
	00016-00012	4650 DH: CLR/AIR/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.35	0.27	0.43	50
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	00016-00014	4650 DH: GRY/AIR/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.35	0.20	0.30	50
	00016-00015	4650 DH: BRZ/AIR/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.35	0.24	0.37	50
	00016-00016	4650 DH: BRZ/AIR/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.35	0.22	0.33	50
	00017-00001	4650 DH: E366/ARG/CLR (2mm/2mm) 1"	VY/VY	2	0.022(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.21	0.49	53
	00017-00002	4650 DH: E366/ARG/CLR (2mm/2mm) 1"	VY/VY	2	0.022(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.19	0.44	53
	00017-00003	4650 DH: CLR/ARG/E366 (2mm/2mm) 1"	VY/VY	2	0.022(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.31	0.30	0.49	53

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	00017-00006	4650 DH: E366/ARG/CLR (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.31	0.19	0.43	53
	00017-00007	4650 DH: E366/ARG/GRY (3mm/3mm) 1"	VY/VY	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.31	0.20	0.33	53
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	00017-00013	4650 DH: GRY/ARG/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.31	0.22	0.33	53
	00017-00014	4650 DH: GRY/ARG/E366 (3mm/3mm) 1"	VY/VY	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.31	0.20	0.30	53
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CPD Number: MGM-A-22

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Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Lyrs	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
	00018-00007	4680 DH: BRZ/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.49	0.48	0.46	41
	00018-00008	4680 DH: BRZ/AIR/CLR (3mm/3mm) 1"	VY/VY	2		0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.49	0.43	0.41	41
	00019-00001	4680 DH: CLR/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.47	0.58	0.61	42
	00019-00002	4680 DH: CLR/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.47	0.52	0.54	42
	00019-00003	4680 DH: GRY/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.47	0.46	0.42	42
	00019-00004	4680 DH: GRY/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.47	0.41	0.37	42
	00019-00005	4680 DH: BRZ/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.47	0.48	0.46	42
	00019-00006	4680 DH: BRZ/ARG/CLR (3mm/3mm) 1"	VY/VA	2		0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.47	0.43	0.41	42
	00020-00001	4680 DH: E270/AIR/CLR (2mm/2mm) 1"	VY/VA	2	0.037(2)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.37	0.28	0.53	50
	00020-00002	4680 DH: E270/AIR/CLR (2mm/2mm) 1"	VY/VA	2	0.037(2)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.37	0.26	0.47	50
	00020-00003	4680 DH: CLR/AIR/E270 (2mm/2mm) 1"	VY/VA	2	0.037(3)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.37	0.35	0.53	50
	00020-00004	4680 DH: CLR/AIR/E270 (2mm/2mm) 1"	VY/VA	2	0.037(3)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.37	0.32	0.47	50
	00020-00005	4680 DH: E270/AIR/CLR (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.37	0.28	0.53	50
	00020-00006	4680 DH: E270/AIR/CLR (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.37	0.25	0.47	50
	00020-00007	4680 DH: E270/AIR/GRY (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.37	0.27	0.36	50
	00020-00008	4680 DH: E270/AIR/GRY (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.37	0.25	0.32	50
	00020-00009	4680 DH: E270/AIR/BRZ (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.37	0.28	0.40	50
	00020-00010	4680 DH: E270/AIR/BRZ (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.37	0.25	0.35	50
	00020-00011	4680 DH: CLR/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.37	0.35	0.53	50
	00020-00012	4680 DH: CLR/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.37	0.32	0.47	50
	00020-00013	4680 DH: GRY/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.37	0.27	0.36	50
	00020-00014	4680 DH: GRY/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.37	0.24	0.32	50
	00020-00015	4680 DH: BRZ/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.37	0.28	0.40	50
	00020-00016	4680 DH: BRZ/AIR/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.37	0.25	0.35	50

NFRC Product Certification Authorization Report



Manufacturer: MGM Industries	Product Series: 4650 / 4680 Double Hung	Simulation Lab: SATI	Initial Cert. Date: 06/03/2009
Street: 287 Free Hill Road	Product Type: VSDH	Sim. Report #: A4532.09-116-45	Re-Certification Date: 10/06/2011
City/State/Zip: Hendersonville, TN 37075	Air Leakage:	Sim. Report Date: 09/08/2011	Revised Date: 09/08/2011
Print Date: 10/06/2011		Test Date: 11/22/2010	Expiration Date: 11/22/2014

CPD Number: MGM-A-22

IA: American Architectural Manufacturers Association

Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Lyrs	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
	00021-00001	4680 DH: E270/ARG/CLR (2mm/2mm) 1"	VY/VA	2	0.037(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.28	0.53	53
	00021-00002	4680 DH: E270/ARG/CLR (2mm/2mm) 1"	VY/VA	2	0.037(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.25	0.47	53
	00021-00003	4680 DH: CLR/ARG/E270 (2mm/2mm) 1"	VY/VA	2	0.037(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.36	0.53	53
	00021-00004	4680 DH: CLR/ARG/E270 (2mm/2mm) 1"	VY/VA	2	0.037(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.32	0.47	53
	00021-00005	4680 DH: E270/ARG/CLR (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.28	0.53	53
	00021-00006	4680 DH: E270/ARG/CLR (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.25	0.47	53
	00021-00007	4680 DH: E270/ARG/GRY (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.33	0.27	0.36	53
	00021-00008	4680 DH: E270/ARG/GRY (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.33	0.25	0.32	53
	00021-00009	4680 DH: E270/ARG/BRZ (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.33	0.27	0.40	53
	00021-00010	4680 DH: E270/ARG/BRZ (3mm/3mm) 1"	VY/VA	2	0.037(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.33	0.25	0.35	53
	00021-00011	4680 DH: CLR/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.35	0.53	53
	00021-00012	4680 DH: CLR/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.32	0.47	53
	00021-00013	4680 DH: GRY/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.33	0.26	0.36	53
	00021-00014	4680 DH: GRY/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.33	0.24	0.32	53
	00021-00015	4680 DH: BRZ/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.33	0.28	0.40	53
	00021-00016	4680 DH: BRZ/ARG/E270 (3mm/3mm) 1"	VY/VA	2	0.037(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.33	0.25	0.35	53
	00022-00001	4680 DH: E366/AIR/CLR (2mm/2mm) 1"	VY/VA	2	0.022(2)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.36	0.21	0.49	50
	00022-00002	4680 DH: E366/AIR/CLR (2mm/2mm) 1"	VY/VA	2	0.022(2)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.36	0.19	0.44	50

NFRC Product Certification Authorization Report



Manufacturer: MGM Industries	Product Series: 4650 / 4680 Double Hung	Simulation Lab: SATI	Initial Cert. Date: 06/03/2009
Street: 287 Free Hill Road	Product Type: VSDH	Sim. Report #: A4532.09-116-45	Re-Certification Date: 10/06/2011
City/State/Zip: Hendersonville, TN 37075	Air Leakage:	Sim. Report Date: 09/08/2011	Revised Date: 09/08/2011
Print Date: 10/06/2011		Test Date: 11/22/2010	Expiration Date: 11/22/2014

CPD Number: MGM-A-22

IA: American Architectural Manufacturers Association

Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Llys	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.
	00022-00003	4680 DH: CLR/AIR/E366 (2mm/2mm) 1"	VY/VA	2	0.022(3)	0.813	CU-D	Fill 1: AIR (100)	N		CL	0.36	0.30	0.49	50
	00022-00004	4680 DH: CLR/AIR/E366 (2mm/2mm) 1"	VY/VA	2	0.022(3)	0.813	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.36	0.27	0.44	50
	00022-00005	4680 DH: E366/AIR/CLR (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.36	0.21	0.49	50
	00022-00006	4680 DH: E366/AIR/CLR (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.36	0.19	0.43	50
	00022-00007	4680 DH: E366/AIR/GRY (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.36	0.20	0.33	50
	00022-00008	4680 DH: E366/AIR/GRY (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.36	0.19	0.30	50
	00022-00009	4680 DH: E366/AIR/BRZ (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.36	0.21	0.37	50
	00022-00010	4680 DH: E366/AIR/BRZ (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.36	0.19	0.33	50
	00022-00011	4680 DH: CLR/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	N		CL	0.36	0.30	0.49	50
	00022-00012	4680 DH: CLR/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	CL	0.36	0.27	0.43	50
	00022-00013	4680 DH: GRY/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	N		GY	0.36	0.23	0.33	50
	00022-00014	4680 DH: GRY/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	GY	0.36	0.20	0.30	50
	00022-00015	4680 DH: BRZ/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	N		BZ	0.36	0.24	0.37	50
	00022-00016	4680 DH: BRZ/AIR/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: AIR (100)	G	0.75	BZ	0.36	0.22	0.33	50
	00023-00001	4680 DH: E366/ARG/CLR (2mm/2mm) 1"	VY/VA	2	0.022(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.21	0.49	53
	00023-00002	4680 DH: E366/ARG/CLR (2mm/2mm) 1"	VY/VA	2	0.022(2)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.19	0.44	53
	00023-00003	4680 DH: CLR/ARG/E366 (2mm/2mm) 1"	VY/VA	2	0.022(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.30	0.49	53
	00023-00004	4680 DH: CLR/ARG/E366 (2mm/2mm) 1"	VY/VA	2	0.022(3)	0.813	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.27	0.44	53
	00023-00005	4680 DH: E366/ARG/CLR (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.21	0.49	53
	00023-00006	4680 DH: E366/ARG/CLR (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.19	0.43	53
	00023-00007	4680 DH: E366/ARG/GRY (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.33	0.20	0.33	53
	00023-00008	4680 DH: E366/ARG/GRY (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.33	0.18	0.30	53

NFRC Product Certification Authorization Report



Manufacturer: MGM Industries **Product Series:** 4650 / 4680 Double Hung **Simulation Lab:** SATI **Initial Cert. Date:** 06/03/2009
Street: 287 Free Hill Road **Product Type:** VSDH **Sim. Report #:** A4532.09-116-45 **Re-Certification Date:** 10/06/2011
City/State/Zip: Hendersonville, TN 37075 **Air Leakage:** **Sim. Report Date:** 09/08/2011 **Revised Date:** 09/08/2011
Print Date: 10/06/2011 **Test Date:** 11/22/2010 **Expiration Date:** 11/22/2014

CPD Number: MGM-A-22													IA: American Architectural Manufacturers Association			
Status	Product Num.	Manufacturer Code	Frame/Sash	Glaz Lyrs	Low-E (Surface)	Gap Width(s)	Spacer	Gap Fill	Grids	Dividers	Tint	U-Factor	SHGC	VT	Cond. Res.	
	00023-00009	4680 DH: E366/ARG/BRZ (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.33	0.20	0.37	53	
	00023-00010	4680 DH: E366/ARG/BRZ (3mm/3mm) 1"	VY/VA	2	0.022(2)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.33	0.19	0.33	53	
	00023-00011	4680 DH: CLR/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		CL	0.33	0.30	0.49	53	
	00023-00012	4680 DH: CLR/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	CL	0.33	0.27	0.43	53	
	00023-00013	4680 DH: GRY/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		GY	0.33	0.22	0.33	53	
	00023-00014	4680 DH: GRY/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	GY	0.33	0.20	0.30	53	
	00023-00015	4680 DH: BRZ/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	N		BZ	0.33	0.24	0.37	53	
	00023-00016	4680 DH: BRZ/ARG/E366 (3mm/3mm) 1"	VY/VA	2	0.022(3)	0.750	CU-D	Fill 1: ARG/AIR (95/5)	G	0.75	BZ	0.33	0.21	0.33	53	

Baseline Information

Test Lab	Test Date	Test Size	Tested U-Value	Standard U-Value	Test Report Number
TATI	11/22/2010	1200mm x 1499mm	0.270	0.266	A4533.08-116-46

Comments:

I hereby certify that all requirements for NFRC Certification Authorization have been met and that the above information is true and correct, to the best of my knowledge.

Authorized IA
Signature: _____