CONSTRUCTION CONSULTING LABORATORY WEST
4751 West State Street, Suite B • Ontario, California 91762
Ph. (909) 591-1789 • Fax (909) 627-9020 • www.cclwest.com

TEST REPORT # 10-5371
March 1, 2010

TESTED FOR

Bristolite Skylights
401 E. Goetz Ave.
Santa Ana, CA 92707

TEST LOCATION

Construction Consulting Laboratory West
4715 West State Street Suite B
Ontario, CA 91762

TESTING PERFORMED

Load Test on Domes

DATE OF TEST

Feb. 12 and Feb. 25, 2010

SPECIMENS

The test units supplied by Bristolite Skylights were "used" skylights removed from a building:

A) Model **6072-ES-CMG-1-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome on curb mount frame. Marked by Bristolite as 4B – Vista – 11/.
B) Model **6072-ES-CMG-1-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome on curb mount frame. Marked by Bristolite as 4D.
C) Model **4896-ES-CMG-1-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome on curb mount frame. Not marked.
D) Model **4896-ES-CMG-1-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome on curb mount frame. Not marked.
E) Model **4896-ES-CMG-1-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome on curb mount frame. Not marked.
F) Model **6072-ES-CMG-2-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome with interior acrylic dome on curb mount frame. Marked by Bristolite as 4E.
G) Model **6072-ES-CMG-2-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome with interior acrylic dome on curb mount frame. Marked by Bristolite as 4A.
H) Model **6072-ES-CMG-2-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome with interior acrylic dome on curb mount frame. Marked by Bristolite as 4F.
I) Model **6072-ES-CMG-2-ESA-IR-HW-MF** 1/8" nom. thickness fiberglass dome with interior acrylic dome on curb mount frame. Marked by Bristolite as 4C.

CONSTRUCTION AND MATERIALS

The test units were "used" standard fiberglass domed skylights with either a gel coat or an acrylic coating over the fiberglass. Some assemblies had an acrylic interior dome (units F thru I). The domes were fastened to an extruded mounting frame, curb mount, per manufacturer's standards and the skylight unit was tested as an assembly. The assembly was fastened to a structural tube test frame that simulated the typical curb mount installation by the laboratory.

TEST PROCEDURE

A load plate (12" x 12") was placed at the top center of the dome. Loads were applied onto the skylight dome by raising the tube frame into a fixed fixture containing a compression load cell. As the load force was applied observations were recorded. Loads at 400, 700 and 1000 lbs. were held for one (1) minute. Additional loads were applied gradually with the final load being held for one (1) minute.

LOAD PERFORMANCE

The ultimate load capacity of any of the domes was not achieved due to the limit of the compression load cell used in the tests (5000 lbs.) No total failure occurred.

Testing was conducted/witnessed in all or part by:

Jack W. Jackson	Construction Consulting Lab West
Chad Jackson	Construction Consulting Lab West
James Scales	Construction Consulting Lab West

TEST DATA

UNIT	TEST LOAD	OBSERVATIONS 2-12-2010
A	400 LBS.	Uniform inversion
BS (4B)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	1600 LBS.	Tore an open fold crack in fiberglass – 12 inch long by 1" open
	3500 LBS.	Partially inverted – no further cracking - the crack closed - held for one min.
	5000 LBS.	Partially inverted – no addn'l cracking - held for one min.
B	400 LBS.	Uniform inversion
BS (4D)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	3500 LBS.	Partially inverted – no cracking
	5000 LBS.	Partially inverted – no cracking – held for one min.
C	400 LBS.	Uniform inversion
4'x8'	700 LBS.	Uniform inversion
	1000 LBS.	Uniform inversion
	1800 LBS.	Tore an open fold crack in fiberglass – 20 inch long by 6" open at corner
	3500 LBS.	Fully inverted – no open cracking
	5000 LBS.	Partially inverted – no addn'l cracking – crack did not close - held for one min.
D	400 LBS.	Uniform inversion
4'x8'	700 LBS.	Uniform inversion
	1000 LBS.	Uniform inversion
	1800 LBS.	Tore 2 open cracks in fiberglass – 6 inch long by 2 inch open at opp. corners
	3350 LBS.	Fully inverted – no open cracking – cracks closed
	5000 LBS.	Fully inverted – no addn'l cracking - held for one min.
E	400 LBS.	Uniform inversion
4'x8'	700 LBS.	Uniform inversion
	1000 LBS.	Uniform inversion
	1800 LBS.	Tore an open crack in fiberglass – 6 inch long by 1/2" open
	3500 LBS.	Fully inverted – no open cracking – crack closed
	5000 LBS.	Fully inverted – no addn'l cracking - held for one min.

UNIT	TEST LOAD	OBSERVATIONS 2-25-2010
F	400 LBS.	Uniform inversion
BS (4E)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	2100 LBS.	Tore an open fold crack in fiberglass – 9 inch long by 1" open - corner
	4400 LBS.	Partially inverted – tore an open fold crack - 12" long by 1 1/2" open - corner
	5000 LBS.	Partially inverted – no addn'l cracking – cracks closed - held for one min.
G	400 LBS.	Uniform inversion
BS (4A)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	3180 LBS.	Tore an open fold crack in fiberglass – 24 inch long by 3" open at side
	5000 LBS.	Partially inverted – no further cracking – crack closed
	5000 LBS.	Partially inverted – int. acrylic dome cracked at 20 seconds of the one min. load
H	400 LBS.	Uniform inversion
BS (4F)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	3130 LBS.	Tore an open fold crack in fiberglass – 30 inch long by 1" open at side
	5000 LBS.	Partially inverted – no addn'l cracking – cracks closed - held for one min.
I	400 LBS.	Uniform inversion
BS (4C)	700 LBS.	Uniform inversion
5'x6'	1000 LBS.	Uniform inversion
	3120 LBS.	Tore open fold crack in fiberglass – 24" long by 6" open at corner
	3400 LBS.	Tore open fold crack in fiberglass – 10" long by 1"open at opposite corner
	4500 LBS.	Partially inverted – 10" crack closed other crack opened to 24" by 10" open
	5000 LBS.	Partially inverted – int. acrylic dome cracked at 30 seconds of one min. load

TESTING COMPLETED: Nine unit assemblies

SUMMARY

All skylights supported a load of 5000 lbs. imposed on one square foot at the center of the domes and held for a duration of one minute.

Notes:

1) "Fold" cracks occurred when the domes inverted from convex to concave and the fiberglass separated or tore as the shape changed. When the dome fully inverted these cracks would close but when the dome only partially inverted under the final load of 5000 lbs. the cracks sometimes remained open to the dimensions noted.
2) There were no cracks which a person or body could fall through during any test.
3) The largest open crack was 24" long by 10" open at the corner on unit "I" (5'x6').

Jack W. Jackson
Construction Consulting Laboratory West
President/Manager of Testing