

TEST REPORT			
Report No	P17027-17		
Tested by (name and signature)	James Ho / James Ho		
Approved by (name and signature)	Bruce Wang / Beslay		
Date of issue:	2017-11-21		
Total number of pages	Total 16 pages, including 10 pages of Annex A		
Testing Laboratory	A Plus Safety Consulting Co., Ltd.		
Address :	No. 66-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan		
Applicant's name	FSP Group Inc.		
Address:	No. 22, Jianguo E., Rd, Taoyuan, Taiwan.		
Test specification:			
Standard:	IEC 60529 (Edition 2.2)		
Test procedure:	N/A		
Non-standard test method	N/A		
Test item description	LED Controlgears		
Model/Type reference:	FSP200-FZAE1(560)MGXX, FSP200-FZAE1(370)MGXX (where XX=0~9 or A~Z or blank for commercial use purpose)		
IP Code:	IP67		



General remarks:

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

General product information:

- Model designation : FSP200-FZAE1(560)MGXX and FSP200-FZAE1(370)MGXX X= commercial purpose use only, can be 0 to 9 or A~Z or A~Z or blank.
- 2. For Models FSP200-FZAE1(560)MGXX, all models are identical except for model designation.
- 3. For Models FSP200-FZAE1(370)MGXX, all models are identical except for model designation.
- Models FSP200-FZAE1(560)MG and FSP200-FZAE1(370)MG are identical to Model FSP200-FZAE(070)MG under Test Report No. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29), except for model designation.
- 5. The definition of "enclosure" is including outer box and intimal potting compound according the client's information.
- 6. This test report no. P17027-17 is to be used in conjunction with test report no. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29)

Summary of testing:

The tested samples were pre-production models without the serial numbers.

Unless otherwise specified, all tests were conducted at models FSP200-FZAE(070)MG and FSP200-FZAE(070)G to represent other models.

This test report was referred to previously investigated results of test report No. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29).



Report No. P17027-17

Tests to be conducted			
Test No.	Test Name	Clause	Results
1	Dust Test for First Characteristic Numerals 6	13.4, 13.6	Р
2	Test for Second Characteristic Numeral 7: Temporary Immersion between 0.15 m and 1 m	14.2.7, 14.3	Р

Possible test case verdicts:	
- test case does not apply to the test object:	N/A
- test object does meet the requirement:	P (Pass)
- test object does not meet the requirement:	F (Fail)

Unless specified otherwise in the individual methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature : 25 °C ± 10 °C, Relative Humidity: 50 % ± 25 %. Air pressure: 86 kPa to 106 kPa

***** Test Sample Identification

The table below is provided to correlation of sample numbers and specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	Test No.	Sample No.	Product Identification
P17151211	2015-12-11	1	9	LED Controlgears
		2	10	Model: FSP200-FZAE(070)MG
		1	11	Same as above, except model FSP200-FZAE(070)G
		2	12	

Dust Test for First Characteristic Numerals 6:

CL. 13.4, CL. 13.6

Test Method

The test was made using a dust chamber incorporating the basic principles shown in figure 2 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber.

The talcum powder used is able to pass through a square-meshed sieve the nominal wire diameter of which is 50 μ m and the nominal width of a gap between wires 75 μ m.

The amount of talcum powder to be used was 2 kg per cubic metre of the test chamber volume. It hasn't been used for more than 20 tests.

The object of the test was to draw into the enclosure, by means of depression, a volume of air 80 times

the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour.

The depression did not exceed 2 kPa (20 mbar) on the manometer shown in figure 2.

The extraction rate of 40 to 60 volumes per hour was obtained, and the duration of the test was 2 h.



Figure 2 – Test device to verify protection against dust (dust chamber)

Form No.: J32-A004-01-5.0 Form Page 4

Dust Test for First Characteristic Numerals 6: (Cont'd)

CL. 13.4, CL. 13.6

Test Result

The test result was considered acceptable since the dust was not found in the cord or on components after test.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE(070)MG	9	The dust was found between outer box and internal potting
FSP200-FZAE(070)G	11	compound, but was not round in the cord of on components.

Test for Second Characteristic Numeral 7: Temporary Immersion betweenCL.14.2.7, CL.14.30.15 m and 1 m:

Test Method

The test was made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied:

- a) the lowest point of enclosures with a height less than 850 mm was located 1 000 mm below the surface of the water.
- b) the duration of the test was 30 min;
- c) the water temperature did not differ from that of the equipment by more than 5 K. Water temperature: 25 °C / Equipement temperature: 26 °C

Test Result

The test result was considered acceptable since no deposit of water was observable inside in the cord or

on components after test.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE(070)MG	10	No deposit of water was observable inside in the cord or
FSP200-FZAE(070)G	12	on components.



Annex A – Photographs

A Plus Safety Consulting Co., Ltd.

Page 1 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 7



Page 2 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 8



Page 3 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 9



Page 4 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 10



Page 5 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 11



Page 6 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 12



Page 7 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 13



Page 8 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 14



Page 9 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 15



Page 10 of 10

Report No. P17027-17



Form No.: J32-A004-01-5.0 Form Page 16



TEST REPORT			
Report No	P17005-17		
Tested by (name and signature)	Jamas Ha		
:	James Ho /		
Approved by (name and signature)	Backard		
:	Bruce Wang /		
Date of issue:	2017-05-12		
Total number of pages	Total 16 pages, including 10 pages of Annex A		
Testing Laboratory	A Plus Safety Consulting Co., Ltd.		
Address:	No. 66-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan		
Applicant's name:	FSP Group Inc.		
Address :	No. 22, Jianguo E., Rd, Taoyuan, Taiwan.		
Test specification:			
Standard:	IEC 60529 (Edition 2.2)		
Test procedure:	N/A		
Non-standard test method	N/A		
Test item description:	LED Controlgears		
Model/Type reference:	FSP200-FZAE1(830)MGXX, FSP200-FZAE1(420)MGXX, FSP200-FZAE1-24MGXX, FSP200-FZAE1-24GXX, FSP200-FZAE1-48MGXX, FSP200-FZAE1-48GXX. (where XX=0~9 or A~Z or blank for commercial use purpose)		
IP Code:	IP67		



General remarks:

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"(see Enclosure #)" refers to additional information appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

General product information:

- Models FSP200-FZAE1(830)MGXX, FSP200-FZAE1-48MGXX, FSP200-FZAE1(420)MGXX and FSP200-FZAE1-24MG are identical to Model FSP200-FZAE(070)MG under Test Report No. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29), except for model designation.
- Models FSP200-FZAE1-24GXX and FSP200-FZAE1-48GXX are identical to Model FSP200-FZAE(070)G under Test Report No. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29), except for model designation.
- 3. The definition of "enclosure" is including outer box and intimal potting compound according the client's information.
- 4. This test report no. P17005-17 is to be used in conjunction with test report no. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29).

Summary of testing:

The tested samples were pre-production models without the serial numbers.

Unless otherwise specified, all tests were conducted at models FSP200-FZAE(070)MG and FSP200-FZAE(070)G to represent other models.

This test report was referred to previously investigated results of test report No. P17039-15 (Issued by A Plus Safety Consulting Co., Ltd. dated 2015-12-29).



Page	3	of	6

Report No. P17005-17

Tests to be conducted			
Test No.	Test Name	Clause	Results
1	Dust Test for First Characteristic Numerals 6	13.4, 13.6	Р
2	Test for Second Characteristic Numeral 7: Temporary Immersion between 0.15 m and 1 m	14.2.7, 14.3	Р

Possible test case verdicts:	
- test case does not apply to the test object:	N/A
- test object does meet the requirement:	P (Pass)
- test object does not meet the requirement:	F (Fail)

Unless specified otherwise in the individual methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature : 25 °C ± 10 °C, Relative Humidity: 50 % ± 25 %. Air pressure: 86 kPa to 106 kPa

***** Test Sample Identification

The table below is provided to correlation of sample numbers and specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	Test No.	Sample No.	Product Identification
P17151211	2015-12-11	1	9	LED Controlgears
		2	10	Model: FSP200-FZAE(070)MG
		1	11	Same as above, except model FSP200-FZAE(070)G
		2	12	

Dust Test for First Characteristic Numerals 6:

CL. 13.4, CL. 13.6

Test Method

The test was made using a dust chamber incorporating the basic principles shown in figure 2 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber.

The talcum powder used is able to pass through a square-meshed sieve the nominal wire diameter of which is 50 μ m and the nominal width of a gap between wires 75 μ m.

The amount of talcum powder to be used was 2 kg per cubic metre of the test chamber volume. It hasn't been used for more than 20 tests.

The object of the test was to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour.

The depression did not exceed 2 kPa (20 mbar) on the manometer shown in figure 2.

The extraction rate of 40 to 60 volumes per hour was obtained, and the duration of the test was 2 h.



Figure 2 – Test device to verify protection against dust (dust chamber)

Form No.: J32-A004-01-5.0 Form Page 4

Dust Test for First Characteristic Numerals 6: (Cont'd)

CL. 13.4, CL. 13.6

Test Result

The test result is considered acceptable since the dust was not found in the cord or on components after test.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE(070)MG	9	The dust was found between outer box and internal potting compound, but was not found in the cord or on components.
FSP200-FZAE(070)G	11	

Test for Second Characteristic Numeral 7: Temporary Immersion between 0.15 CL.14.2.7, CL.14.3 m and 1 m:

Test Method

The test was made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied:

- a) the lowest point of enclosures with a height less than 850 mm was located 1 000 mm below the surface of the water.
- b) the duration of the test was 30 min;
- c) the water temperature did not differ from that of the equipment by more than 5 K. Water temperature: 25 °C / Equipment temperature: 26 °C

Test Result

The test result is considered acceptable since no deposit of water was observable inside in the cord or on components after test.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE(070)MG	10	No deposit of water was observable inside in the cord or on components.
FSP200-FZAE(070)G	12	



Annex A – Photographs

A Plus Safety Consulting Co., Ltd.

Page 1 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 7

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Page 2 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 8

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Page 3 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 9



Page 4 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 10



Page 5 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 11



Page 6 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 12



Page 7 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 13



Page 8 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 14



Page 9 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 15



Page 10 of 10

Report No. P17005-17



Form No.: J32-A004-01-5.0 Form Page 16