

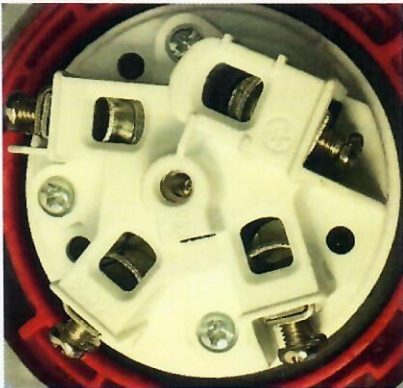


جراي ماكنزي للخدمات الهندسية (ش.ذ.م.م)
Gray Mackenzie Engineering Services L.L.C.

ص.ب. ٣٢٣٩٣ دبي
الإمارات العربية المتحدة
تليفون : ٩٧١ ٤ ٣٢٤١٣٨٠
فاكس : ٩٧١ ٤ ٣٢٤١٣٨٤
P.O. Box: 32393 Dubai
United Arab Emirates
Tel : 00 971 4 3241380
Fax : 00 971 4 3241384
E-Mail: mail@gmes.ae

TEST REPORT	
Reference Standard: IEC 60309-1	
Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements	
Report Reference No.....	51958
Date of issue.....	04 July 2021
Total Number of Pages.....	08
Applicant's Name.....	SGS
Address.....	Dubai, UAE
Standard(s).....	IEC 60309-1:1999+AMD1:2005+AMD2:2012 CSV Ed. 4.2.
Test Report Form No.....	GMES/LAB/FRM/-021 Rev 01, Jan'18
Test Report Form(s) Originator.....	Gray Mackenzie Engineering Services LLC
Master TRF.....	04-January-2018
Client Document No.....	N/A
Client Reference No.....	40043200
Lab Reference No.....	N/A
Job No.....	25382
Data Sheet No.....	20957
Test Item Description.....	INDUSTRIAL PLUG
Trade Mark.....	ELMARK
Manufacturer.....	Not Indicated
Model/Type reference.....	HTN 0341 Cat No: 37341
Serial Number.....	0121AP
Ratings.....	63A, 3P+E, 400V AC, IP67.



Testing Procedure and Testing Location:	
<input checked="" type="checkbox"/> Testing Laboratory:	Gray Mackenzie Engineering Services LLC, Shed No.118 Al Jadaf, Dubai, U.A.E
Tested By (name+signature).....:	Sana Maqbool Testing Engineer <i>Sana Maqbool</i>
Approved By (name+signature).....:	Vijaya Ratna Paul.Pitta Lab Incharge <i>Vijaya Ratna Paul.Pitta</i>
<input checked="" type="checkbox"/> The product complies with the requirements of the tests performed as per IEC 60309-1.	
<input checked="" type="checkbox"/> This product complies with the essential requirements of SASO	
Note: Only the tests requested by the customer were conducted.	
Copy of Marking Label:	
Plug Marking Label:	
	
Terminal Marking:	
	



Possible Test Case Verdicts:

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

Testing

Date of receipt of test item: 15 June 2021

Date (s) of performance of tests: 27 June 2021 to 04 July 2021

Laboratory Temperature.....: 23±2°C

General Remarks:



The test results presented in this report relate only to the object tested.

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

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



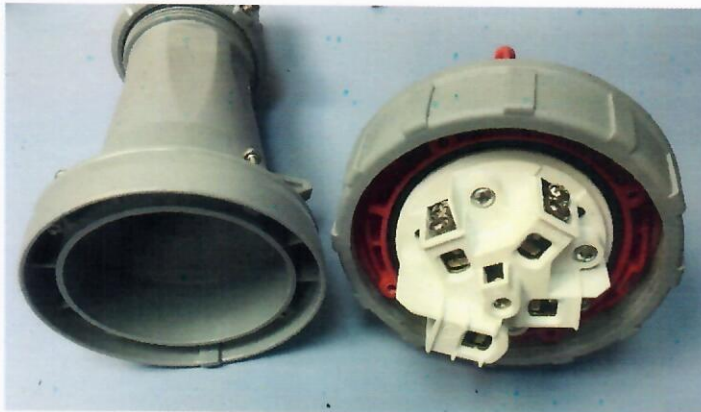
IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
7	MARKING:		P
7.1	rated current(s) in amperes;	63A	P
	rated operating voltage(s) or range(s) in volts;	400V AC	P
	symbol for nature of supply,	AC	P
	rated frequency if exceeding 60 Hz;		N/A
	name or trade mark of the manufacturer or of the responsible vendor;	ELMARK	P
	type reference, which may be a catalogue number;	HTN 0341	P
	degree of protection;	IP67	P
	symbol indicating the position of the earthing contact:		P
7.4	Insulation Voltage (If required)	690V~	P
7.5	Terminal marking for rewirable accessories:	L1,L2,L3, 	P
7.6	Marking shall be indelible and easily legible.		P
7.7	the rated operating voltage is indicated by a colour	Red	P
9	PROTECTION AGAINST ELECTRIC SHOCK:		P
9.1	it shall not be possible to make contact between a contact of a socket or appliance inlet and a contact of a socket-outlet or connector while any contact is accessible.	No Access to live parts	P
	Accessories shall be so designed that live parts of socket-outlets and connectors, when they are wired as in normal use, and live parts of plugs and appliance inlets, when they are in partial or complete engagement with the complementary accessories, are not accessible.	Compliance Checked	P
9.2	when inserting the plug or connector, the earth connection is made before the phase connections and neutral, if any, are made;		P
	– when withdrawing the plug or connector, the phase connections and neutral, if any, are broken before the earth connection is broken.		P
9.3	It shall not be possible to inadvertently assemble the part carrying plug contacts into the enclosure of a socket-outlet or connector.		P
10	PROVISION FOR EARTHING:		P
10.1	Accessories with earthing contact shall be provided with an earthing terminal		P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Earthing contacts shall be directly and reliably connected to the earthing terminals,		P
10.2	Accessible metal parts of accessories with earthing contact, which may become live in the event of an insulation fault, shall be reliably connected to the internal earthing terminal(s) by construction.		P
	Contact Resistance:	1.4mΩ	P
10.3	Earthing contacts shall be capable of carrying a current equal to that specified for the phase contacts without overheating.		P
10.4	Erthing contacts shall be so shrouded or guarded that they are protected against mechanical damage.		P
11	TERMINALS AND TERMINATIONS:		P
11.1.1	Rewirable accessories shall be provided with terminals.		P
	Rewirable plugs and connectors shall be provided with terminals that accept flexible conductors.		P
11.1.3	Terminals shall allow the conductor to be connected without special preparation..		P
11.1.4	parts of terminals shall be of a metal having, under conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate to intended use.- copper		P
11.1.5	parts of terminals shall be of a metal having, under conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate to intended use.		P
11.1.6	Terminals shall be properly fixed to the accessory and shall not loosen when connecting and disconnecting the conductors.		P
11.1.7	Each terminal shall be located in proximity to the other terminals, as well as to the internal earthing terminal, if any, unless there is a sound technical reason to the contrary.		P
11.1.8	terminals shall be so located or shielded that:		P
	– screws or other parts becoming loose from the terminals, cannot establish any electrical connection between live parts and metal parts connected to the earthing terminal;		P
	– conductors becoming detached from live terminals cannot touch metal parts connected to the earthing terminal;		P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
	– conductors becoming detached from the earthing terminal cannot touch live parts.		P
11.1.9	When the conductors have been correctly fitted, there shall be no risk of accidental contact between live parts of different polarity or between such parts and accessible metal parts,		P
P11.2.2	screw type terminals shall have appropriate mechanical strength.		P
	Screws and nuts for clamping shall have an ISO thread or a thread comparable in pitch and mechanical strength		P
11.2.3	Screw type terminals shall be so designed that they clamp the conductor between metal surfaces with sufficient contact pressure and without damaging the conductor.		P
11.2.5	clamping screws or nuts of earthing terminals shall be adequately locked against accidental loosening, and it shall not be possible to loosen them without the aid of a tool.		P
18	DEGREES OF PROTECTION:		P
	Accessories shall have the degrees of protection marked on the products accordance with 18.1 and IEC 60529	IP67	P
	Water and dust shall not enter inside accessories		P
18.5	All accessories shall be proof against humid conditions which may occur in normal use.		P
	The humidity treatment is carried out in a humidity cabinet containing air with a relative humidity maintained between 91 % and 95 %. The temperature of the air, at all places 25°C for days (168 h).		P
19	INSULATION RESISTANCE AND DIELECTRIC STRENGTH:		P
19.1	The insulation resistance and the dielectric strength of accessories shall be adequate		P
19.2	The insulation resistance is measured with a D.C. voltage of approximately 500 V applied, the measurement being made 1 min		P
	a) between all poles connected together and the body;		P
	b) between each pole in turn and all others, these being connected to the body;		P
	The insulation resistance shall be not less than 5 MΩ	50.5GΩ	P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
19.3	Electric Strength test 2500V	No Breakdown	P
23	FLEXIBLE CABLES AND THEIR CONNECTION:		P
23.3	Plugs and connectors provided with a flexible cable are subjected to a pull test in apparatus similar to that shown in Figure 6, followed by a torque test.		P
	After the tests, the cable shall not have been displaced by more than 2 mm..	<0.5mm	P
	During the tests, the cable shall not be damaged.	No Damage	P
	Torque 0.8Nm apply for screw		P
	For 63A pull test 120N		P
24	MECHANICAL STRENGTH:		P
	Accessories shall have adequate mechanical strength.		P
24.2	Blows shall be applied to the samples by means of the impact test apparatus	No Damage	P
24.2.2	Impact Energy 2 J Five blows shall be applied to each test sample by means of the impact apparatus	No Damage	P
26	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND:		P
26.1	Creepage distances, clearances and distances through sealing compound shall be not less than the values in millimetres shown in Table 16.		P
	Creepage (between live parts of different polarity) min 10mm	25.98mm	P
	Clearance (between live parts of different polarity) min 10mm	19.24mm	P
27	RESISTANCE TO HEAT, FIRE, AND TRACKING:		P
27.3	Parts of insulating material are subjected to a ball-pressure test ;		P
	Resistance to heat At 125°C:	0.86mm	P
27.4	External parts of insulating material and insulating parts supporting live parts of accessories shall be resistant to abnormal heat and to fire.		P
	current-carrying parts and parts of the earthing circuits in position		P
	Glow wire test At 850°C:	No flame on tissue	P

PHOTOGRAPH OF TEST OBJECT:





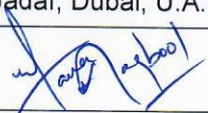

جراي ماكنزي للخدمات الهندسية (ش.ذ.م.م)
Gray Mackenzie Engineering Services L.L.C.

ص ب : ٣٢٣٩٣ دبي
الإمارات العربية المتحدة
تليفون : ٣٢٤١٣٨٠ & ٩٧١ ٠٠
فاكس : ٣٢٤١٣٨٤ & ٩٧١ ٠٠
P.O. Box: 32393 Dubai
United Arab Emirates
Tel : 00 971 4 3241380
Fax : 00 971 4 3241384
E-Mail: mail@gmes.ae

TEST REPORT	
Reference Standard: IEC 60309-1	
Plugs, socket-outlets and couplers for industrial purposes - Part 1:	
General requirements	
Report Reference No.....:	51959
Date of issue.....:	04 July 2021
Total Number of Pages.....:	08
Applicant's Name.....:	SGS
Address.....:	Dubai, UAE
Standard(s).....:	IEC 60309-1:1999+AMD1:2005+AMD2:2012 CSV Ed. 4.2.
Test Report Form No.....:	GMES/LAB/FRM/-021 Rev 01, Jan'18
Test Report Form(s) Originator.....:	Gray Mackenzie Engineering Services LLC
Master TRF.....:	04-January-2018
Client Document No.....:	N/A
Client Reference No.....:	40043200
Lab Reference No.....:	N/A
Job No.....:	25382
Data Sheet No.....:	20958
Test Item Description.....:	INDUSTRIAL SOCKET
Trade Mark.....:	ELMARK
Manufacturer.....:	Not Indicated
Model/Type reference.....:	HTN 0351 Cat No: 37852
Serial Number.....:	Not Indicated
Ratings.....:	63A, 3P+N+E, 400V AC, IP67.



Testing Procedure and Testing Location:

<input checked="" type="checkbox"/>	Testing Laboratory:	Gray Mackenzie Engineering Services LLC, Shed No.118 Al Jadaf, Dubai, U.A.E
Tested By (name+signature).....:		Sana Maqbool Testing Engineer 
Approved By (name+signature).....:		Vijaya Ratna Paul.Pitta Lab Incharge 
<input checked="" type="checkbox"/> The product complies with the requirements of the tests performed as per IEC 60309-1.		
<input checked="" type="checkbox"/> This product complies with the essential requirements of SASO		
Note: Only the tests requested by the customer were conducted.		

Copy of Marking Label:

Socket Marking Label:



Terminal Marking:





Possible Test Case Verdicts:

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

Testing

Date of receipt of test item: 15 June 2021

Date (s) of performance of tests: 27 June 2021 to 04 July 2021

Laboratory Temperature.....: 23±2°C

General Remarks:



The test results presented in this report relate only to the object tested.

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

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



IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
7	MARKING:		P
7.1	rated current(s) in amperes;	63A	P
	rated operating voltage(s) or range(s) in volts;	400V AC	P
	symbol for nature of supply,	AC	P
	rated frequency if exceeding 60 Hz;		N/A
	name or trade mark of the manufacturer or of the responsible vendor;	ELMARK	P
	type reference, which may be a catalogue number;	HTN 0351	P
	degree of protection;	IP67	P
	symbol indicating the position of the earthing contact:		P
7.3	For socket-outlets marking shall be on the outside of enclosure or on the lid		P
7.4	Insulation Voltage (If required)	690V~	P
7.5	Terminal marking for rewirable accessories:	L1,L2,L3, N, 	P
7.6	Marking shall be indelible and easily legible.		P
7.7	the rated operating voltage is indicated by a colour	Red	P
9	PROTECTION AGAINST ELECTRIC SHOCK:		P
9.1	it shall not be possible to make contact between a contact of a socket or appliance inlet and a contact of a socket-outlet or connector while any contact is accessible.	No Access to live parts	P
	Accessories shall be so designed that live parts of socket-outlets and connectors, when they are wired as in normal use, and live parts of plugs and appliance inlets, when they are in partial or complete engagement with the complementary accessories, are not accessible.	Compliance Checked	P
9.2	when inserting the plug or connector, the earth connection is made before the phase connections and neutral, if any, are made;		P
	– when withdrawing the plug or connector, the phase connections and neutral, if any, are broken before the earth connection is broken.		P
9.3	It shall not be possible to inadvertently assemble the part carrying plug contacts into the enclosure of a socket-outlet or connector.		P
10	PROVISION FOR EARTHING:		P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
10.1	Accessories with earthing contact shall be provided with an earthing terminal		P
	Earthing contacts shall be directly and reliably connected to the earthing terminals,		P
10.2	Accessible metal parts of accessories with earthing contact, which may become live in the event of an insulation fault, shall be reliably connected to the internal earthing terminal(s) by construction.		P
	Contact Resistance:	1.38mΩ	P
10.3	Earthing contacts shall be capable of carrying a current equal to that specified for the phase contacts without overheating.		P
10.4	Erthing contacts shall be so shrouded or guarded that they are protected against mechanical damage.		P
11	TERMINALS AND TERMINATIONS:		P
11.1.1	Rewirable accessories shall be provided with terminals.		P
	Rewirable plugs and connectors shall be provided with terminals that accept flexible conductors.		P
11.1.3	Terminals shall allow the conductor to be connected without special preparation..		P
11.1.4	parts of terminals shall be of a metal having, under conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate to intended use.- copper		P
11.1.5	parts of terminals shall be of a metal having, under conditions occurring in the equipment, mechanical strength, electrical conductivity and resistance to corrosion adequate to intended use.		P
11.1.6	Terminals shall be properly fixed to the accessory and shall not loosen when connecting and disconnecting the conductors.		P
11.1.7	Each terminal shall be located in proximity to the other terminals, as well as to the internal earthing terminal, if any, unless there is a sound technical reason to the contrary.		P
11.1.8	terminals shall be so located or shielded that:		P
	– screws or other parts becoming loose from the terminals, cannot establish any electrical connection between live parts and metal parts connected to the earthing terminal;		P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
	– conductors becoming detached from live terminals cannot touch metal parts connected to the earthing terminal;		P
	– conductors becoming detached from the earthing terminal cannot touch live parts.		P
11.1.9	When the conductors have been correctly fitted, there shall be no risk of accidental contact between live parts of different polarity or between such parts and accessible metal parts,		P
11.2.2	screw type terminals shall have appropriate mechanical strength.		P
	Screws and nuts for clamping shall have an ISO thread or a thread comparable in pitch and mechanical strength		P
11.2.3	Screw type terminals shall be so designed that they clamp the conductor between metal surfaces with sufficient contact pressure and without damaging the conductor.		P
11.2.5	clamping screws or nuts of earthing terminals shall be adequately locked against accidental loosening, and it shall not be possible to loosen them without the aid of a tool.		P
18	DEGREES OF PROTECTION:		P
	Accessories shall have the degrees of protection marked on the products accordance with 18.1 and IEC 60529	IP67	P
	Water and dust shall not enter inside accessories		P
18.5	All accessories shall be proof against humid conditions which may occur in normal use.		P
	The humidity treatment is carried out in a humidity cabinet containing air with a relative humidity maintained between 91 % and 95 %. The temperature of the air, at all places 25°C for days (168 h).	No Damage	P
19	INSULATION RESISTANCE AND DIELECTRIC STRENGTH:		P
19.1	The insulation resistance and the dielectric strength of accessories shall be adequate		P
19.2	The insulation resistance is measured with a D.C. voltage of approximately 500 V applied, the measurement being made 1 min		P
	a) between all poles connected together and the body;		P
	b) between each pole in turn and all others, these being connected to the body;		P

IEC 60309-1			
Clause	Requirement - Test	Result - Remark	Verdict
	The insulation resistance shall be not less than 5 MΩ	60.0GΩ	P
19.3	Electric Strength test 2500V	No Breakdown	P
23	FLEXIBLE CABLES AND THEIR CONNECTION:		P
23.3	Plugs and connectors provided with a flexible cable are subjected to a pull test in apparatus similar to that shown in Figure 6, followed by a torque test.		-
	After the tests, the cable shall not have been displaced by more than 2 mm..	<0.5mm	P
	During the tests, the cable shall not be damaged.	No Damage	P
	Torque 0.8Nm apply for screw		P
	For 63A pull test 120N		P
24	MECHANICAL STRENGTH:		P
	Accessories shall have adequate mechanical strength.		P
24.2	Blows shall be applied to the samples by means of the impact test apparatus	No Damage	P
24.2.2	Impact Energy 2 J Five blows shall be applied to each test sample by means of the impact apparatus	No Damage	P
26	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND:		P
26.1	Creepage distances, clearances and distances through sealing compound shall be not less than the values in millimetres shown in Table 16.		P
	Creepage (between live parts of different polarity) min 10mm	29.65mm	P
	Clearance (between live parts of different polarity) min 10mm	22.80mm	P
27	RESISTANCE TO HEAT, FIRE, AND TRACKING:		P
27.3	Parts of insulating material are subjected to a ball-pressure test ;		P
	Resistance to heat At 125°C:	0.86mm	P
27.4	External parts of insulating material and insulating parts supporting live parts of accessories shall be resistant to abnormal heat and to fire.		P
	current-carrying parts and parts of the earthing circuits in position		P
	Glow wire test At 850°C:	No flame on tissue	P

PHOTOGRAPH OF TEST OBJECT:

