



Lloyd's
Register

Transport
Canada
Safety and Security




CERTIFICATE OF TYPE APPROVAL ISSUED ON BEHALF OF TRANSPORT CANADA

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations with regards to the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by Transport Canada to issue the relevant certificates, licences, permits etc.

Manufacturer	Mustang Survival ULC
Address	7525 Lowland Drive Burnaby, BC, V5J 5L1 Canada
Product Type	INSULATED IMMERSION SUIT
Product Description	Inherently Buoyant Insulated Immersion Suit – Type: "MIS220TC"
Specified Standards	TP 14475E CAN/CGSB 65.16 IMO Resolution MSC.81 (70) Part 1 as amended

**The attached Design Appraisal Document forms part of this certificate.
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.**

Date of issue	20 December 2018	Expiry date	30 January 2022
Certificate No.	LRTC 0000122/M1	Signed	
Sheet No	1 of 7	Name	L. Thomas Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



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The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

EXAMINED DOCUMENTATION

UL File MQ589 Vol 2 Sec 1 as amended by UL and reported to LR in "Mustang masterlist MIS2x0vTC" file rev 01, dated 12-Dec-18.

TEST REPORTS

Report No:	Title	Date
CORD Group Ltd Report #R11-05 Section 3.4	Donning Time	May 2011
CORD Group Ltd Report #R11-05 Section 3.5	Mobility Out of the Water	May 2011
CORD Group Ltd Report #R11-05 Section 3.6	Mobility in Water	May 2011
CORD Group Ltd Report #R11-05 Section 3.7	Hand Dexterity	May 2011
CORD Group Ltd Report #R11-05 Section 3.8	Swimming	May 2011
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Tests 11 & 12		-
CORD Group Ltd Report #R11-05 Section 3.9	Leakage	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 13		May 2011
CORD Group Ltd Report #R11-05 Section 3.10	Skid Resistance	May 2011
CORD Group Ltd Report #R11-05 Section 3.11	Jump/Impact	May 2011
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 3		-
CORD Group Ltd Report #R11-05 Section 3.12	Head First Entry	May 2011
CORD Group Ltd Report #R11-05 Section 3.13	Field of Vision - on land	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 4		May 2011
CORD Group Ltd Report #R11-05 Section 3.14	Field of Vision - in water	May 2011
CORD Group Ltd Report #R11-05 Section 3.15	Flotation Stability - Righting	May 2011
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 10		-
CORD Group Ltd Report #R11-05 Section 3.16	Flotation Stability - Freeboard	May 2011
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 9		-
CORD Group Ltd Report #R11-05 Section 3.19	Water Ingress - Jump Method	May 2011
CORD Group Ltd Report #R11-05 Section 3.20	Water Ingress - Swimming Method	May 2011
CORD Group Ltd Report #R11-05 Section 4.1	Thermal Performance Using Thermal Manikin	May 2011
CORD Group Ltd Report #R11-05 Section 4.2	Inflatable Buoyancy Element - Strength of Attachment	May 2011
CORD Group Ltd Report #R11-05 Section 4.3	Inflatable Buoyancy Element - Temperature Resistance	May 2011
CORD Group Ltd Report #R11-05 Section 4.4	Inflatable Buoyancy Element - Solvent Resistance	May 2011



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CORD Group Ltd Report #R11-05 Section 4.5	Inflatable Buoyancy Element - Flame Resistance	May 2011
CORD Group Ltd Report #R11-05 Section 4.6	Inflatable Buoyancy Element - Puncture Resistance	May 2011
CORD Group Ltd Report #R11-05 Section 4.7	Inflatable Buoyancy Element - Over Pressure	May 2011
CORD Group Ltd Report #R11-05 Section 4.8	Inflatable Buoyancy Element - Air Retention	May 2011
Mustang Report 2011010-1 - MIS230HR Ankle Strap Attach Strength Test	Ankle, Wrist and Other Strap Attachment Strength	28.01.2011
Mustang Report 2011010-1 - MIS2X0 Fabric Abrasion Resistance Test	Fabric Abrasion Resistance	27-05-2011
Mustang Report 2011010-2 - MIS2X0 Oil Resistance Test	Oil Resistance	27.05.2011
Mustang Report 2011010-3 - MIS2X0 Strength of Seams	Strength of Seams	27.05.2011
Mustang Report 2011010-4 - MIS2X0 Auxiliary Buoyancy	Auxiliary Buoyancy	22-06-2011
Mustang Report 2011010-5 - MIS2X0 Pillow Leakage	Pillow Leakage Test	24-06-2011
Mustang Report 2011010-6 - MIS2X0 Total Buoyancy	Total Buoyancy (Adult Small)	24-06-2011
CORD Group Ltd Report #R11-05 Section 3.17		May 2011
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test's 1, 2, 5, 6, 7, & 8	1) Donning test, 2) water ingress test, 5) hand dexterity test, 6) walking test, 7) climbing test, 8) air penetration test	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet1 - Test 9	Retro-Reflective Tape	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet2 - Test 1	Donning test (Adult Universal)	12.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet3 - Test 1	Donning Test (Adult Small)	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet3 - Test 2	Stability & Retroreflective (Adult Small)	-
UL File MQ589 Vol 2 Sec 1 - 1DataSheet5 - Test 1	Air Retention Test (Adult Universal)	06.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet5 - Test 2	Oil Resistance Test (Adult Universal)	11.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet5 - Test 3	Flame Exposure Test (Adult Universal)	05.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet5 - Test 4	Buddy Line (Adult Universal)	04-08-2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet5 - Test 5	Retrieval Harness Strength (Adult Universal)	04.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 - Test 1	Temperature Cycling	24.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 - Test 2	-30 Degrees Donning Test (Adult Universal)	24.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 - Test 3	Body Strength (Adult Universal)	04.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 - Test 5	Body Strength (Adult Small)	05.08.2009



Lloyd's
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Lloyd's Register EMEA (Southampton)

Marine & Offshore UK&I

Lloyd's Register Global Technology Centre, Southampton
Boldrewood Innovation Campus, Burgess Road, Southampton,
SO16 7QF

Telephone +44 330 414 1000 / E-mail tass@lr.org

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UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 - Test 6	Seam Strength (Adult Universal)	10.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet6 Test 2	-30 Degrees Donning Test (Adult Universal)	24-08-2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet7 - Test 1	Dimensional Verification (Adult Universal)	17.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet7 - Test 2	Measured Buoyancy (Adult Universal)	19.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet7 - Test 3	Adjusted Buoyancy (Adult Universal)	19.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet9 - Test 1	Dimensional Verification (Adult Small)	24.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet9 - Test 2	Measured Buoyancy (Adult Small)	27.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet9 - Test 3	Adjusted Buoyancy (Adult Small)	27.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet10 - Test 1	Dimensional Verification (Adult Oversize)	18.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet10 - Test 2	Measured Buoyancy (Adult Oversize)	25.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet10 - Test 3	Adjusted Buoyancy (Adult Oversize)	25.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet11 - Test 1	Fit Evaluation (Adult Oversize)	04.08.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet12 - Test 1	Thermal Protection Test	xx.06.2009
UL File MQ589 Vol 2 Sec 1 - 1DataSheet13 - Test 1	Infrared Analysis	11.09.2009
UL File MQ589 Vol 2 Sec 1 - 4DataSheet1 - Test 3	Harness Thickness (Adult Small)	23.06.2010
UL File MQ589 Vol 2 Sec 1 - 4DataSheet1 - Test 4	Buddy Line Test (Adult Small and Adult Universal))	23.06.2010
UL File MQ589 Vol 2 Sec 1 - 10DataSheet1 - Test 1	Body Strength (Child, tested to Adult Loads)	02.10.2017
UL File MQ589 Vol 2 Sec 1 - 10DataSheet1 - Test 2	Retrieval Harness Strength (Child, tested to Adult Loads)	02.10.2017
UL File MQ589 Vol 2 Sec 1 - 10DataSheet1 - Test 3	Buddy Line Test (Child, tested to Adult Loads)	02.10.2017
UL File MQ589 Vol 2 Sec 1 - 10DataSheet1 - Test 4	Seam Strength (Child, tested to Adult Loads)	04.10.2017
UL File MQ589 Vol 2 Sec 1 - 11DataSheet1 - Test 1	Buddy Line Test (Child, Adult Small and Adult Universal)	21-06.2018
UL File MQ715 Test Report No. 5	Sheifloat Foam Flotation Material Test	29.05.2012
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 1	Report on Immersion Suits	22.09.2009
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 2	Material Info Corrections	01.10.2009



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Lloyd's Register EMEA (Southampton)

Marine & Offshore UK&I

*Lloyd's Register Global Technology Centre, Southampton
Boldrewood Innovation Campus, Burgess Road, Southampton,
SO16 7QF*

Telephone +44 330 414 1000 / E-mail tass@lr.org

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UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 3	Boot Sole Thickness	16.10.2009
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 4	SOLAS Compliance	23.07.2010
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 5	Buddy Line not optional	05.11.2010
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 6	Add Serial # option	23.07.2010
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 7	Non-SOLAS base models	22.02.2011
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 8	Non-SOLAS model markings	14.04.2011
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 9	Add Sheifloat foam	16.05.2013
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 10	Add Shenzen Thread	30.11.2017
UL MQ589 Vol 2 Sec 1 Test Record (Tests T1 to T11) - Test 11	Buddy Line with Shenzen thread	03.07.2018

CONDITIONS OF CERTIFICATION

- Each immersion suit and its packaging shall be marked with the height/weight range of persons for whom it is approved;
- MIS220 TC- ADULT SMALL, for weight range 40-100 kg & height 120-170cm;
- The design buoyancy of the immersion suit designs are;
- MIS220 TC ADULT SMALL, 128.5 N;
- Alterations/modifications to the Type Approved immersion suits shall be authorized, agreed and tracked by Lloyd's Register through the agreed master list update process. The product shall be in compliance with SOLAS and Flag State Administration (of the vessel on which the immersion suit is installed) requirements at all times.
- Transport Canada certification of the immersion suit is based on policy document TP 13585 E
- Each immersion suit and its packaging shall be marked with the height/weight range of persons for whom it is approved in accordance to paragraph 8 of CAN/CGSB-65.16-2005. The suit shall be marked or label attached to clearly indicate that the suit can be worn without needing a separate lifejacket
- The immersion suit is to be fitted with retro-reflective material in accordance with IMO Resolution A.658 (16)



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9. Instruction for use in both English and French shall be provided with each Immersion Suit as prescribed by SOLAS Regulation III/35 one or more additional copies shall be provided for inclusion in the Vessel's Training Manual
10. As prescribed by SOLAS Regulation III/36 and where applicable, Immersion Suit shall be maintained as per manufacturer's instructions
11. Each immersion suit and its packaging shall be permanently and clearly marked at least with: name of the manufacturer, date of manufacture or lot number, the model designation, the weight and height range of persons suitable to wear the immersion suit, simple donning instructions and approval certificate number. The label must also clearly state that the suit complies with the IMO LSA Code (wording such as IMO LSA Code Res. MSC.48 (66) is also acceptable)
12. All instructions or markings that accompany life-saving appliances or are printed directly on the appliances must be in both English and French as per Transport Canada Standard No: TP 14612E (05/2011), paragraph 2.2.1.3. However independent signage can be accepted in lieu of the instructions or marking required in paragraph 2.2.1.3 if it is in both English and French, highly visible (size, colour, posting location), water and weather proof and posted at each muster station and where the appliance is stored
13. Each immersion suit shall be supplied with an explanatory leaflet in English and French containing instructions for care and maintenance of the immersion suit. When carrying out the inspection of immersion suits as required by SOLAS regulation III/20.7.2 consideration should be given to IMO MSC/Circ.1047 on Guidelines for Monthly Shipboard Inspection of Immersion Suits and Anti-exposure Suits by the Ship's Crew
14. An approved light and whistle meeting the requirements of LSA Code Regulations II/2.2.3 and II/2.2.1.14, respectively, are to be fitted. The light is to be tested and meet the requirements of IMO Res. MSC.81 (70), I/10.3 and 10.4 and is attachment have to be to the satisfaction of the attending Surveyors
15. The on board arrangements and installation of this product are not part of this Design Appraisal or Certificate. All such arrangements are to be to the satisfaction of the Surveyors attending on board
16. If the specified standards are amended during the validity of this certificate, this product type is to be re-approved prior to it being supplied to vessels to which the amended standards apply
17. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure compliance with SOLAS Regulation III/5
18. Production items are to be manufactured in accordance with a quality control procedure and records kept as required by MSC.81(70) Part 2, Paragraph 1.2. Production tests are to be conducted to ensure compliance with SOLAS Chapter III Regulation 5. This does not preclude any further testing to additional requirements of the Marine Administration of the country where the ship is registered (i.e. the flag state) or those acting on behalf of that Administration



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SO16 7QF
Telephone +44 330 414 1000 / E-mail tass@lr.org

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19. Should a change of Place of Production from that stated below be required i.e. where the stages of manufacture/assembly/testing of this product take place, the new Place of Production is to be advised to us prior to the change taking place. This Certificate will require to be updated for Approval to be maintained

PLACE OF PRODUCTION

Shei Chung Hsin Industrial Co. Ltd.
Manhattan (Svay Rieng) Special Economic Zone
National Road#1, Bavet Commune, Chantrea District,
Svay Rieng Cambodia 20202



Lijo Thomas
Senior Specialist
Statutory Fire & Safety
Southampton Technical Support Office, Marine & Offshore
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).