

1° Istituto Italiano di ricerca, collaudo, test e certificazione di calzature, abbigliamento
dispositivi di protezione individuale per il lavoro, lo sport, e l'outdoor

The 1st Italian testing and research center for footwear, clothing,
Personal Protective Equipment and Outdoor Sports Equipment

1. Italienisches Prüf- und Forschungsinstitut für Schuhe, Bekleidung,
Persönliche Schutzausrüstung und Outdoor Sportausrüstung

SR

Firm: **KTM MOTORCYCLE AG**
Stalhofnerstraße, 3
5230 Mattighofen
Austria

DC 9721

For the attention of: Gabriele Debettio

TEST REPORT

RAPPORTO DI PROVA

PRÜFBERICHT

N. **3736007/E**

date: 04/09/2018

Sampling: done by the Applicant

Samples received on: *

Test period: *

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Test durchgeführt von qualifiziertem
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SAMPLES: Light-duty protective garment for motorcycling use declared class A:
- art. **"TWO4RIDE JACKET"** color black/grey size M;
- art. **"TWO4RIDE JACKET WOMAN"** color grey/purple size S;

See the complete description on the next page.

REQUEST: Laboratory tests in accordance with EN ISO 13688:2013 and FprEN
17092-4:2018 (version 2018-05) after 5 washing cycles (EN ISO 6330:2012)
procedure 3G, drying procedure A for the aim of the Certification
(Regulation (EU)2016/425)

NOTE:

* this document is based on the previous test reports n° 3724078/E,
3703006/E, 364728/E, 3714043/E, 362003.01/E;
for Innocuousness of the materials see RdP n. 3724078/E, 362003.01/E,
362003.01/E;

OUTCOME:  **PASS**

Description:

article: **"TWO4RIDE JACKET"** color black/grey size M;

external side:

- black fabric "Reinforcement Filltex #4311 PU2 DWR US\$5.30/Y FOB KOREA" **(1a)** sewn on material "2";
- black stretch knitted fleece "FY15099-28" **(2a)**;
- gray stretch knitted fleece "FY15099-28" **(2b)**;

internal side:

- orange fabric "FY-1011 P/D" **(5)**;
- black felt "180G ALOVA AGAIST PEEING/BLK" **(6)**;
- black fabric "#1206 330D TASLAN" **(7)**;
- black perforated knitting "POLY 11:1 MESH" **(8)**;
- orange knitting "CH-1068 FABRIC" **(10)**;
- orange tape "READY TO RACE" **(11)**;
- black fabric "210T TAFFETA P/D" **(12)**;

main fastening system:

- by means of a metallic zipper and Velcro;

sleeve and wrist closure:

- by means of Velcro **(4)**;

external pockets:

- black felt "180G ALOVA AGAIST PEEING/BLK" **(6)** with metallic zip closure;

internal pockets:

- black fabric "#1206 330D TASLAN" **(7)** with metallic zip closure;

protectors pocket:

- for shoulder and elbow pockets: black perforated knitting "POLY 11:1 MESH" **(8)** with Velcro closure;
- for back protector pocket: black perforated knitting "POLY 11:1 MESH" **(8)** and black stretch knitting "PKT MOCK-UP" **(9)** with Velcro closure;

vents:

- black knitting "P2M 320 MESH/BLK" **(3)** with metallic zip closure;

article: **"TWO4RIDE JACKET WOMAN"** color grey/purple size S;

it differs from the model **"TWO4RIDE JACKET"** color black/grey size M in the following features:

external side:

- gray fabric "Reinforcement Filltex #4311 PU2 DWR US\$5.30/Y FOB KOREA" **(1b)** sewn on material "2";
- gray stretch knitted fleece "FY15099-28" **(2b)**;
- purple stretch knitted fleece "FY15099-28" **(2c)**;

protectors inserted in the garment:

- shoulder protector:
 - **YF602** company YF PROTECTOR;
- elbow protector
 - **YF603** company YF PROTECTOR;
- back protector
 - **"SCL - (X)* 19"** company SAS TEC;

The combinations for the impact abrasion tests:

- A) 1+2+8 (zone 1-2-3);
- B) 2+8 (zone 2-3);
- C) 2 (zone 2-3);
- D) 2+6 (zone 2-3);
- E) 2+9 (zone 2-3);
- F) 3 (vents, zone 3);

The seams externally identified in the garment ("SSS") are the followings ("/" means " stitched"):

- a) 2//2 - Flat-seam, single stitching- with covered safety stitching (zone 2-3);

The seams identified in the protector pocket material are the followings ("/" means " stitched"):

- b) 8//8 - Outside-seam, double stitching (protector pocket material);
- c) 8//9 - Flat-seam "folded", single stitching (protector pocket material);
- d) 8//8 - Flat-seam "folded", single stitching (protector pocket material);



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References	Tests	Measuring unit	Requirements	Results
EN ISO 13688:2013	Protective clothing - general requirements			
4.2	Innocuousness		Materials shall not adversely affect the health or hygiene of the user, materials shall not release substances generally known to be toxic, carcinogenic, mutagenic, allergenic, toxic to reproduction or otherwise harmful.	pass
4.3 4.3.1- 4.3.2 - 4.3.3	Design		The design should facilitate its correct positioning on the user and should ensure that it remains in place during the course of work, ensuring that no parts of the body get uncovered by expected movements by the wearer. When two or more items are worn together, they should be compatible.	pass

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References	Tests	Measuring unit	Requirements	Results
4.4 4.4.1 – 4.4.2 Annex C	<p>Comfort Clothing:</p> <ul style="list-style-type: none"> - should provide a level of comfort consistent with the level of protection against hazard which is provided; - should not have rough, sharp or hard surfaces that irritate or injure the user; - should not be so tight, loose and/or heavy so that it restricts normal movements; - should not be so tight that blood flow and deep breathing are restricted; - allows the following movements: standing, sitting, walking, stair climbing, raising both hands above the head, bending over; - should not be so loose that it flaps about or moves independently and inconveniently; - should not be points at which unexpected and unintended gaps open up between or within components of the clothing; - should not cause any unreasonable restriction of movement at any joint; - putting on and removing other items of PPE should be possible without difficulty. 		<p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p>	<p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p> <p>pass</p>

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4.4 4.4.1 – 4.4.2 Annex C	<p>Comfort</p> <ul style="list-style-type: none"> - armholes, crotch and other elements of clothing design are appropriately proportioned and positioned; - the range of adjustment available is adequate; - arms and legs of the clothing should not be so long that they interfere with hand and foot movements. 		<p>pass</p> <p>pass</p> <p>pass</p>	<p>pass</p> <p>pass</p> <p>pass</p>

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References	Tests	Measuring unit	Requirements	Results
FprEN 17092-4:2018 (FprEN 17092-1:2018) (version 2018-05)	Protective garments for motorcycle riders			
-	Class of protection - declared - verified	-	AAA, AA, A, B or C AAA, AA, A, B or C	A A
4.1.1 (EN ISO 13688:2013 p. 4.2)	Innocuousness	-	Materials shall not adversely affect the health or hygiene of the user, materials shall not release substances generally know to be toxic, carcinogenic, mutagenic, allergenic, toxic to reproduction or otherwise harmful.	pass
4.1.2	Dimensional stability of garments			
(EN ISO 13688:2013 p. 5.2+5.3)	Dimensional changing due to cleaning	-	(5 washing cycles at 30°C)	washing procedure: 3G drying procedure: A
	<u>Whole garment</u>			
(ISO 5077:2007 ISO 6330:2012)	Domestic washing <u>Jacket</u> <ul style="list-style-type: none"> • Measure a • Measure b • Measure c • Measure d • Measure e • Measure f • Measure g1/g2/g3 • Measure h • Measure i <u>Trouser</u> <ul style="list-style-type: none"> • Measure a • Measure b • Measure c • Measure d • Measure e • Measure f • Measure g 	%	≥-5 and ≤+5	0 -0,5 -0,5 0 0 -0,5 -0,5/-0,5/-0,5 0 -0,5 - - - - - -

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References	Tests	Measuring unit	Requirements	Results
-	After cleaning washing marking shall be legible	-	pass	pass
4.1.3	Garment and samples performance after cleaning			
-	General (not required for class B)	-	Garments and samples shall be cleaned according to EN ISO 13688:2013, 5.2 prior to testing and shall conform to the requirements specified in 4.2 to 4.8 of this standard after the required number of cleanings, if applicable	pass
-	General (not required for class B)	-	For garments with removable mandatory or optional impact protectors, where according to the manufacturer's instructions the protectors are to be removed prior to cleaning, the protectors shall be able to be reinstalled after cleaning	pass

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References	Tests	Measuring unit	Requirements	Results
4.2	Impact energy absorption			
4.2.1 (Table 1) (not required for class B)	Impact protection shall be present in the garment according to table 1	-	pass	pass
	For garments with pockets for optional impact protectors, there can be at least one type of impact protector that is available for each protector pocket;	-	pass	pass
	All impact protectors present in a garment, whether mandatory or optional, shall meet at least the Level 1 requirements according to the standards listed in Table 1. Pockets intended for impact protectors shall not contain any other items other than impact protectors complying with the applicable part of EN1621;	-	Pass	Pass
	EN 1621-1 protectors shall be positioned in the garment so that they cover the appropriate body part according to the relevant impact protector standard. This requirement applies also to optional protectors (EN 1621-2 and/or EN 1621-3) if present;	-	Pass	Pass
	Suit/Jackets:			
	- Elbow (mandatory)	-	pass	pass
	- Shoulder (mandatory)	-	pass	pass
	- Chest (optional)	-	pass	-
	- Back (optional)	-	pass	pass
	- Lumbar (optional)	-	pass	-
	Suits/Trousers:			
	- Knee or knee leg (mandatory)	-	pass	-
	- Hip (mandatory for Class AAA and AA, optional only Class A, B and C garments)	-	pass	-

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References	Tests	Measuring unit	Requirements	Results
4.2.2 (5.5) (not required for class B)	Impact protector location and fixation			
	Internal or external impact protectors present in or on garments shall be correctly aligned in or on the garment no matter which system is used to hold them in place	-	pass	pass
	Garments, with impact protector pockets for location of optional impact protectors listed in the information notice for users, shall be manufactured to ensure correct positioning of the inserted impact protector EN 1621-1, EN 1621-2, prEN 1621-3, and EN 1621-4 protectors shall be positioned in the garment so that they cover the appropriate body part according to the relevant impact protector standard.	-	pass	pass
	Impact protectors shall be appropriately placed and restrained according to the test method described in prEN 17092-1:2017, 5.2.2 and 5.4.2.	-	pass	pass

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References	Tests	Measuring unit	Requirements	Results
4.2.2 (5.5) (not required for class B)	<p>Restrain of impact protectors:</p> <p>The checks below shall be performed on a garment with protectors worn by an assessor;</p> <p>a) A visual and tactile check is performed to confirm that protectors are over the correct location on the body also while performing the ergonomic exercises as in clause 5.5.4.3, Table 11, point 6;</p> <p>b) A visual and tactile check of the restraint of protectors in pockets is performed to confirm that the protectors are secure within the pockets;</p> <p>c) A visual and tactile check is performed to confirm that protectors restrained by other means are secured in their position;</p>	-	pass	pass
		-	pass	pass
		-	pass	pass
4.3 Table 2 (5.4)	<p>DAM – Impact abrasion resistance</p> <p><i>Note; Results are reported in a specific table, at the end of the report.</i></p>	-	-	-

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References	Tests	Measuring unit	Requirements	Results
4.4 4.4.1	<p>Structurally strong seams</p> <p>- SSS in the SSL, which are on the exterior of the garment in Zone 1 and 2 shall have at least one line of the stitching protected by an SSL material</p> <p>- If present leather or textile abrasion overlays and reinforcements sewn onto the SSL shall have at least two rows of stitching attaching them to the SSL but are not required to have at least one line of stitching protected.</p> <p>- If present external rigid or semi-rigid reinforcements sewn into ("window stitched") or onto the SSL shall have at least two rows of stitching attaching them to the SSL but are not required to have at least one line of stitching protected.</p>	- - -	pass Pass pass	pass - -
				seam: a b c d
4.4.2 Table 3 (EN 13594:2015 p. 6.7 Annex B)	<p>Seam strength:</p> <p>- zone 1</p> <p>- zone 2</p> <p>- zone 3</p> <p>- protector pocket material (if present)</p>	N/mm	<p>≥ 6</p> <p>≥ 6</p> <p>≥ 4</p> <p>≥ 4</p>	<p>- - - -</p> <p>11,7 - - -</p> <p>11,7 - - -</p> <p>- 4,1 4,2 4,4</p>

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References	Tests	Measuring unit	Requirements	Results
				material: 1 2 3 8
4.5 Table 4 (EN ISO 3377-1:2011 for leather or EN ISO 4674-1:2016 method B for other materials)	Tear strength - zone 1 direction a: direction b: - zone 2 direction a: direction b: - zone 3 direction a: direction b: - protector pocket material (if present) direction a: direction b:	N	≥ 35 ≥ 25 ≥ 25 ≥ 10	103 - - - 103 - - - 103 42 - - 103 27 - - 103 42 66 - 103 27 86 - - - - 18 - - - 13
				material: 9
4.5 Table 4 (EN ISO 3377-1:2011 for leather or EN ISO 4674-1:2016 method B for other materials)	Tear strength - zone 1 direction a: direction b: - zone 2 direction a: direction b: - zone 3 direction a: direction b: - protector pocket material (if present) direction a: direction b:	N	≥ 35 ≥ 25 ≥ 25 ≥ 10	- - - - - - 19 19

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References	Tests	Measuring unit	Requirements	Results
4.6	Restraint			
4.6.3 (5.5.3.2)	Garment sleeve restraint	-	shall not be possible to extract the test cone	pass
(5.5.3.2.4)	In the case of loop restraints, the distance between point A and point B shall not be more than 140 mm	-	pass	-
4.7	Additional garment construction requirements			
4.7.1	Garments shall meet the following requirements, according to their zones, which are determined according to the procedure described in clause 5.2	-	pass	pass
4.7.2	Structural closures			
				central zip closure
4.4.2 Table 3 (EN 13594:2015 p. 6.7 Annex B)	Seam strength of the structural closures: - zone 1 - zone 2 - zone 3 Structural closures shall not separate anywhere along their length during testing	N/mm -	≥ 6 ≥ 6 ≥ 4 pass	- - 17,0 pass
				external pocket zip closure
4.4.2 Table 3 (EN 13594:2015 p. 6.7 Annex B)	Seam strength of the structural closures: - zone 1 - zone 2 - zone 3 Structural closures shall not separate anywhere along their length during testing	N/mm -	≥ 6 ≥ 6 ≥ 4 pass	- 8,3 8,3 pass

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References	Tests	Measuring unit	Requirements	Results
				vents zip closure
4.4.2 Table 3 (EN 13594:2015 p. 6.7 Annex B)	Seam strength of the structural closures: - zone 1 - zone 2 - zone 3 Structural closures shall not separate anywhere along their length during testing	N/mm	≥ 6 ≥ 6 ≥ 4 pass	- - 7,7 pass
4.7.3	Vents Openings in any zone of the SSL created by vents or vent systems of any type, including vents closed with structural closures or vent systems designed with multiple closures or fastening systems used in combination to create a larger vent area, shall be completely covered by SSL material that meets the applicable zone requirements or the vent opening must be filled with material that meets the applicable zone requirements, with the exception of vents that are single linear openings in Zone 2 or single linear openings crossing from Zone 2 to Zone 3. These Vents may have an opening that is filled with Zone 3 material, provided the vent has been designed so that its opening is restricted to 4 cm or less in width, when measured at 90° to the line of the closure, at any point along the length of the vent. Apart from these exceptions, vents or vent systems crossing over more than one zone shall meet the requirements of the higher zone.	-	pass	pass

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References	Tests	Measuring unit	Requirements	Results
4.7.4	Pockets Pockets creating an opening in the SSL shall have SSL material inside which fills the exposed opening and extends along the interior of the pocket beyond the opening at least an additional 3 cm	-	pass	pass

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References	Tests	Measuring unit	Requirements	Results
4.8 (5.6) table 11	Fit and ergonomics			
1	<u>Pre-donning assessment</u>			
a	Can you confirm that no metallic, ceramic, plastic or similar hard materials present as studs, staples, rivets, plates, or other structures, used to form part of the protective layer of the garment, pose a hazard to the user?	-	yes/no	yes
b	Does the construction of the garment protect the body from such structures when necessary?	-	yes/no	yes
c	When such features do penetrate the protective layer, the inner surfaces of these features are flush to the protective layer?	-	yes/no	yes
d	Is the garment free from any rough, sharp or hard components, or other features that might cause irritation or that would make riding hazardous?	-	yes/no	yes
2	Is the garment sized in accordance with the manufacturer's fit information and in accordance with the fit instructions supplied in the manufacturer's information notice for users, or according to EN ISO 13688 or is it made-to-measure?	-	yes/no	yes
3	<u>Donning</u>			
a	Is It possible to put on the garment and to operate the fasteners and adjusters without impediment?	-	yes/no	yes
b	Is it possible to don gloves and helmet while wearing the garment?	-	yes/no	yes

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References	Tests	Measuring unit	Requirements	Results
4	<u>Off-bike activities</u> Can the following be carried out without difficulty?			
a	Walking on the flat.	-	yes/no	yes
b	Mounting and dismounting a motorcycle or a device that mimics one.	-	yes/no	yes
	<u>Riding actions</u>			
5	Is it possible to perform the following without difficulty:			
a	Sit astride a motorcycle or device that mimics it, while adopting a riding position.	-	yes/no	yes
b	Make the body movements and position changes necessary to control the motorcycle.	-	yes/no	yes
c	While holding both handlebar grips, turn the head to look to the rear.	-	yes/no	yes
6	Are all impact protectors correctly positioned in such a way as to protect the appropriate body parts (refer to 5.4.2) whilst not preventing adequate movement of limbs or impeding the rider's effective control of the motorcycle?	-	yes/no	yes
7	Is the garment free of unnecessary tightness, which restricts body movement or blood flow in such a way as to prevent effective operation of the motorcycle?	-	yes/no	yes
8	Does the garment fit without creating dangerous interference with the helmet?	-	yes/no	yes
-	Size range the garment is sized in accordance with:	-	the manufacturer's fit information and in accordance with the fit instructions supplied in the information notice	pass

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Impact abrasion resistance "Darmstadt" - prEN 17092-1:2017 § 5.4

Combination	Speed		Final results
	rpm	km/h	
A	265	45	pass
B	147	25	pass
C	147	25	pass
D	147	25	pass
E	147	25	pass
F	n.a.	n.a.	n.a.

End of the test report.