

TECHNICAL REPORT

Subject: Testing of jeans in accordance EN13595-1:2002

Table 5 – Testing of motorcyclists' garment in accordance with EN 13595-1: 2002

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT	UoM (See note D)
5.1 General	The performance level marked on the garment and in the user information shall be determined by the lowest performance level achieved in testing according to 5.4, 5.5, and 5.6. The change in linear dimensions of the clothing material shall not exceed $\pm 3\%$ when cleaned 5 times and tested in accordance with EN 340]	See note A Samples subjected to 5 wash cycles in accordance with ISO 6330 Procedure (30 °C) Dimensional Change Length: 2.3 % Dimensional Change Width: 0.8 %	
5.2 Tear strength	Minimum tear strength shall be 100 N (Leather), or 70 N (Non-leather)	Yellow aramid Specimen Mean Tear Strength (N)	
5.3 Impact energy absorption	Protectors shall be present in zone 1 The location and fixation of these protectors shall meet the requirements of 7.2	EN 1621-1: 1997 impact protector present at hip and knee	N/A

5.4 Abrasion resistance	See table 2	Sample construction: Blue denim, Yellow aramid, Mesh, Black lining Specimen Relative Abrasion Time (s)
-------------------------	-------------	--

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT
5.5 Impact cut resistance	See table 3	Sample construction: Blue denim, Yellow aramid, White Mesh, B Black lining Knife Speed: 2.8 m / s
5.6 Burst strength	See table 4	Jean seams three rows with under stitch
5.7 Dye fastness	Change in colour shall not be worse than grey scale rating 3	See Note C
5.8 pH of leather	pH shall be between 3.5 & 9.5. Difference figure shall be less than 0.7	See Note C

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT
6 Fit & Ergonomics	The assessor shall be able to carry out the following activities whilst wearing the garment, with no discomfort or impediment to movement: Pre-Donning Assessment Is the clothing free from any rough, sharp, or hard components, or other features that might cause irritation or that would make riding hazardous? Is the garment either made-to-measure or labelled in accordance with EN 340? Donning Is it possible to put the garment on and to operate the fasteners & adjusters without impediment; is it possible to don boots? Are all impact protectors correctly positioned (or adjustable) such that they are correctly located to protect the shoulders, elbows & forearms, hips, knees & shins whilst not causing discomfort or preventing adequate movement of the limbs?	Wearer Height: 178 cm The clothing was free from rough, sharp or hard components, See note A The garment can be donned without any impediment and it is possible to don boots. Impact protectors were correctly positioned

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT	(f)
6 Fit & Ergonomics	Off-Bike Activities Can the following be carried out without difficulty?: Walking on the flat at a speed of 2 m/s \pm 1 m/s Stair climbing Bending forward 90° Crouching & picking up a small object Riding actions and compatibility with other items of PPE Is it possible to perform the following without difficulty? Sit astride the motorcycle and adopt a riding position Give right & left turn signals fully extending your arms Is it possible to perform the following without difficulty? Whilst holding both handlebar grips, turn the head to look to the rear Is the clothing free from tightness around the back, legs (in particular the knees), hips, crutch, thighs, shins, and the ankles	All off-bike activities could be carried out and the garment was considered satisfactory All riding actions could be carried out. The garment was free from tightness and was considered satisfactory	

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT	(f)
7.1 Clothing restraint	Divided suits joined at the waist shall have no more than a 200 mm gap horizontally between the ends of the fastener on the abdomen Divided suits with a long jacket or with high trousers shall be joined or restrained so that no gap opens vertically between the two parts when the test force is applied Arm sleeves shall not slide up the test cone more than 60 mm when the test force is applied Ready-made garments shall have available adjustment to fit wrists 10 mm smaller and 10 mm greater in circumference than the test cone Trousler ankles shall not slide up the test cone more than 100 mm when the test load is applied not on the ankle but on the knees Ready-made garments shall have available adjustment to fit ankles 10 mm smaller and 10 mm greater in circumference than the test cone for pants that are worn inside or outside the motorcycle boots	N/A N/A N/A N/A See note E	

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT	UoM (See note D)	PASS / FAIL
7.2 Impact protector restraint	Impact protectors shall not be displaced by more than 20 %	Hip Protector Direction Displacement % Up _____ Down _____ Left _____ Right _____ Knee Protector Direction Displacement % Up _____ Down _____ Left _____ Right _____		
8 Design & Zoning	Protectors to provide shock absorption to EN 1621-1 shall be present in Zone 1. All stitched structural seams in Zones 1, 2, & 3 shall have at least one row of stitches that is protected by at least a layer of basic material. Slide fasteners, if present, shall be mounted below the outer surface of the garment and shall have a layer of leather or fabric behind them. The lining shall not be attached to, but shall slide freely against the outer shell of the clothing in Zones 1 & 2. The total area of materials and constructions present in Zone 3 to provide elasticity or ventilation but which only meet Zone 4 requirements shall not exceed 30 cm2 in any single area and 50 cm2 total area in a jacket or trousers or 100 cm2 total area in a suit. The length of free end projections on the outer surface of the clothing shall be less than 50 mm.	EN 1621-1 marked protector present at hip and knee All stitches in zones 1, 2 & 3 have at least one row of stitches that is protected by at least a layer of basic material Slide fasteners are mounted below outer material and have a layer of fabric behind them. Lining is not connected to the outer shell of the material at the seam within zone 2 No reduced Zone 3 material No free hanging projections		

EN 13595-1: 2002 CLAUSE / TEST	EN 13595-1: 2002 REQUIREMENT	RESULT / COMMENT	UoM (See note D)	PASS / FAIL
9 Marking and information to be supplied	All user information and marking shall contain the minimum information requirements specified by this standard	Not Assessed	N/A	See Note A
10 Pictogram	The pictogram shall be in accordance with that which is detailed in this standard	Not Assessed	N/A	See Note A

ADDITIONAL INFORMATION / NOTES

Table 5 – Additional uncertainty of measurement information (see note D)

CLAUSE / TEST	TEST / COMPONENT	UoM (see note D)
4.13 Impact energy attenuation	Impact energy	
	Transmitted force	