Flammability Test Methods/Standards Outside of the United States

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Additional Publically Available Resources:
Trevira - International Fire Testing Safety
Camira - Global Flammability Standards

This is a living document. Please send comments/additions/edits to: lynne@contracttextiles.org.

Country/Region	Textile Application	Test Method/Standard	Threshold/Classification	Purchase Test Method	Further Information	Notes
EUROPE						
European Union	Curtains and Drapery	EN 13773 Classification: test to EN 1101 & EN 13772	Class 1 (highest) to Class 5	https://www.din.de/en/about-standards/din-standards	https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0::::FSP_PROJECT,FSP_ORG_ID:11770,6229&cs=15DA80C4CF10C5BC57137FB03AE565274	
European Union	Vertical Surfaces/ Panel	EN 13501-1 Single Burning Item: test to EN ISO 11925 & EN13823 can be adhered or unadhered	Fire growth (A1-F) Smoke growth (s1, s2, s3) Flaming droplets (d0, d1, d2)	https://www.din.de/en/about-standards/din-standards		Fire growth grade A is unattainable for anything combustable, e.g. texiles. Grade E and F are both fails, however classified in different ways. Grade F is no performance determined.
European Union	Upholstery	EN 1021, 1 & 2	BS EN 1021 part 1 = Cigarette Test BS EN 1021 part 2 = Match Test	https://www.din.de/en/about-standards/din-standards	https://www.fr-one.com/en/standards/european-en-1021-part-1-and-2-afaaef064f7445d891a384c0fcfffae5	Conducting these individual tests is the equavalent to conducting low hazard BS 7176.
Austria (& EU coutries)	Vertical Surfaces/ Panel/ Curtains and Drapery	ONORM A 3800-1	3 Classifications: Q1 (highest rating), Q2, Q3	https://www.austrian-standards.at/en		Measures smoke emitted during procedure; fabric held vertically.
Austria (& EU coutries)	Upholstery	ONORM B 3825	Pass/Fail	https://www.austrian-standards.at/en	https://www.fr-one.com/en/standards/austrian-%C3%B6norm-b-3825-7baeab36f8bd4accb0c42c054de02116	Seat rig - composite test (fabric/foam)
France (& EU coutries)	Upholstery	NF D60-013	Pass / Fail	https://www.boutique.afnor.org/en-gb/		French paperbag test - an ignition source equivalent to a burning 20g paper pillow. A light, medium and dark fabric are tested to cover the full fabric range.

France (& EU coutries)	Construction & furnishing products (Upholstery / Panel / Curtains & Drapes)	NF P 92-501 - Reaction to fire radiation NF P 92-503 - Electrical Burner test NF P 92-504 - Rate of Flame Spread NF P 92-505 - Melting Droplets	M0, M1, M2, M3, M4 (Non-combustible to easily flammable)	https://www.boutique.afnor.org/en-gb/	https://www.fr-one.com/en/standards/french-nf-p-92-503-507-%28m1%29-98ccca21742b42b1b9afb26cd9bc400b	M0 is unattainable for anything combustable e.g. texiles. Grade M1 is the highest grade possile for textile materials. NF P 92-501 is conducted on materials greater than 5mm in thickness (many textiles would therefore fall outside this criteria)
Germany (& EU coutries)	Upholstery	DIN 66084	Three levels: Class P-c (lowest) - passes EN 1021-1 cigarette Class P-b (medium) - also passes EN 1021-2 match Class P-a (highest) - also passes DIN 54341 paper cushion	https://www.din.de/en/about-standards/din-standards		German paperbag test - an ignition source equivalent to a burning 100g paper pillow.
Germany (& EU coutries)	Upholstery / Panel / Curtains & Drapes	DIN 4102 Part 15/16 - Brandschacht (B1) DIN 4102 Part 1 - Kleinbrenner (B2)	Three tier classification: B1 (Flame retardent) B2 B3 (Highly flammable)	https://www.din.de/en/about-standards/din-standards	https://www.fr-one.com/en/standards/german-din-4102-%28b1%29-cd0f3a50a39c4154b39fdd55384f8f58	Construction standard that is used for textile materials. Vertical test standard, but is used as a method to assess suitability of upholstery fabrics. Standard contains A classification: A1, A2 non combustable)
Italy (& EU coutries)	Upholstery	UNI 9175 (Classe 1IM)	Class 1 (or 1IM) is the best result if fabric performs satisfatory after 140 seconds. Class 2 if fabric starts to fail after 80 seconds. Class 3 if fabric only achieves a positive result after 20 seconds.	https://www.uni.com/en/	https://www.fr-one.com/en/standards/italian-uni-9175-%28classe-uno%29-4c75dd84c5b547f4bf2a0127a968dbd5	
Italy (& EU coutries)	Vertical Surfaces/ Panel/ Curtains and Drapery	UNI 8456 & UNI 9174 - Classe Uno	Two tests performed together to achieve classification from Class 1 (best) to Class 5	https://www.uni.com/en/	https://www.fr-one.com/en/standards/italian-uni-9177%2C-9174-and-8456-%28classe-uno%29-b4025bba3b56462cbf1df91c24cc73ba	
UK	Drapery	BS 5867 Part 2	Type A (low requirement) Type B (medium) Type C (high requirement)	https://knowledge.bsigroup.com/		EU counties tend to use the EN 13773
UK (& EU coutries)	Upholstery	**BS 7176** references the following tests: EN 1021-1 (Cigarette) EN 1021-2 (Match) BS 5852 Crib 5 BS 5852 Crib 7	Three Levels: Low Hazard = Cigarette & Match Medium Hazard = Low Hazard & Crib 5 High Hazard - Low Hazard, and Crib 7	https://knowledge.bsigroup.com/	https://www.fr-one.com/en/Standards/British-BS-7176	BS 7176 is a flammability performance standard based on BS 5852, but with an additional parameter based on defining "Hazard" categories linked directly to the combination of different ignition sources used in the test. Primarily for contract seating this covers cigarette, match and the Medium Hazard (Crib 5) test outlined in BS 5852 Ignition Source 5. For higher hazard applications such as hospital wards and off-shore installations a Crib 7 ignition source test is required, roughly four times the heat intensity of Crib 5.

UK	Residential Upholstery	The Furniture and Furnishings (Fire) (Safety) Regulations 1988 BS 5852, 0 & 1	Pass / Fail test Ignition 0 = smouldering cigarette used as ignition Ignition 1 = A match or equivalent gas flame, using 45ml of butane gas from burner is used for ignition	https://knowledge.bsigroup.com/		UK domestic flammability regulations differ from contract standards. Just because a fabric passes crib 5 Medium Hazard flammability (BS 7176), or indeed Contract cigarette and match standards (EN 1021: 1&2), it does not necessarily mean that it will meet domestic regulations. Flammability testing for fabrics is covered by Schedule 4 Part 1 (cigarette) and Schedule 5 Part 1 (match). The tests are carried out over a non-combustion modified 22kg polyurethane foam as a "worst case" foam and the match is applied for 20 seconds. In the Contract standard a CMHR 35kg foam is used and the match application time is 15 seconds.
UK	Vertical Surfaces/ Panel	BS 476 Part 6 & 7 (maybe only part 7 for textiles)	Part 7 - highest classification is Class 1, also Class 2, 3, & 4 Part 6 (for building structures)- Class 0	https://knowledge.bsigroup.com/		The UK government is proposing in their next update to Approved Document B (the building regulation in England covering fire safety matters within and around buildings) to remove all remaining references to all aspects of the BS 476 series, listing only the harmonised European standard BS EN 13501-1 and subsequent European classification system (Euroclasses).
All other countries in Eastern Europe, despite being a full member of the ISO Standards Organization, have no published standards for fire safety and no regulations for domestic furniture as far as FIRA (Furniture Industry Research Association) is aware.						

NORTH AMERICA						
Canada	Drapery, Drapery Lining, Fabric Valance, Sheer (indoor & outdoor), Upholstered Cornice	CAN ULC S109	Pass/Fail	https://www.shopulstandards.com/	https://www.fr-one.com/en/Standards/Canadian-CANULC-S109	**Small flame test** The small-flame test is intended to determine selected burning characteristics of fabrics and films in single sheets when exposed to a luminous flame 40 mm high for 12s. Flame resistance requirements: 1) Maximum damaged length for ten specimens (average) is 165 mm 2) The specified maximum flaming time for burning droplets from any specimen is 2.0 seconds. **Large flame test** The large-flame test is intended to determine selected burning characteristics of fabrics and films in folds or single sheets when exposed to an oxidizing flame 280 mm high for 120s. Flame resistance requirements: 1) Maximum damaged length for single sheets is 250 mm, for folded this is 635 mm 2) The specified maximum flaming time for burning droplets from any specimen is 2.0 seconds.
Canada	upholstery	Recommended: Cal TB 117-2013	Pass/Fail	https://bhgs.dca.ca.gov/industry/bulletin.shtml		
Canada	Wallcovering/ Panel	CAN ULC S102	Flame Spread Rating Smoke Developed Classification	https://www.shopulstandards.com/	https://canada.ul.com/ulcprograms/buildingandconstructionmaterials/surface-burning-testing/	The CAN/ULC-S102 equipment, known as the Steiner Tunnel, exposes the material, 21" wide x 24' long sample size, to a 90kW flame for a 10-minute duration. The flame propagation along the material's exposed surface is visually observed and average Flame Spread value determined. A light and photoelectric cell record smoke obscuration during the test to validate the material's smoke development characteristics. Oak flooring (FS=100, SD=100) and non-combustible cement board (FS=0, SD=0) provide a bases for calibration and reference.
Mexico	Upholstery	Cal 117-2013 & UFAC Class 1	Pass/Fail	https://bhgs.dca.ca.gov/industry/bulletin.shtml		
SOUTH AMERICA						
Brazil	upholstery	ASTM D1230	Class 1	https://www.astm.org/		This is an apparel test

ASIA						
China	Building Materials and Products	GB 8624-2012 Classification	Class A to F			variety of tests are applied
China including Hong Kong	Upholstered Furniture	GB17927				
India	Upholstered Furniture	IS 12467				
Japan	buidling products, curtains, furniture, bedding	JIS L 1091	Pass/Fail			
Korea	drapes, blinds, roller blinds, wallcoverings	KOFEIS 1001, article 20 clause 2; ASTM E 662 (smoke density), ISO 5659-2 (melting materials)	Pass/Fail			
Pakistan, Singapore, Malaysia	Upholstered Furniture	ISO 8191		https://www.iso.org/standards.html		
Taiwan	Home Textiles	CNS 10285 L3196 A-1 + A-2	Class 1 and Class 2			
Turkey					http://eurocodes.jrc.ec.europa.eu/doc/2013_12_WS_Balkan/presentations/CR_Turkey.pdf	
United Arab Emirates	Drapery	EN 13772 / EN 13773	Class 1 (highest) to Class 5	https://www.din.de/en/about-standards/din-standards		
United Arab Emirates	Upholstery	EN 1021-1+2, BS 5852	Pass/Fail	https://www.din.de/en/about-standards/din-standards		
AUSTRALIA						
Australia/New Zealand	building materials, components & structures	AS / NZS 1530.2 and 1530.3	Pass/Fail			
Australia/New Zealand	upholstered furniture	AS/NZ 3744				
CRUISE **International Code for Application of Fire Test Procedure, 2010 (2010 FTP Code)**						
Cruise	Vertically Supported Textiles and Films (curtains or draperies)	IMO FTP Code Part 7	Testing must be conducted in both the warp and weft directions and should include surface ignition tests, edge ignition tests, and flaming drops. Failure criteria include after-flame time, burn-through to edges, ignition of cotton wool, average char length, and surface flash.	Recognition - USCG or Wheelmark acceptance via MRA(Mutual Recognition Agreement)	https://www.dco.uscg.mil/IMO/	**Scope -** This code is intended for use by the Administration and the competent authority of the flag State when approving products for installation in ships flying the flag of the flag State in accordance with the fire safety requirements of the International Convention for the Safety of Life at Sea. The Code shall be used by testing laboratories when testing and evaluating products under this Code.
Cruise	Upholstered Furniture (textiles, fabrics and leathers)	IMO FTP Code Part 8	Part 8 includes smoldering cigarette tests and propane flame tests on upholstered furniture. There should be no progressive smoldering or flaming ignition.	Recognition - USCG or Wheelmark acceptance via MRA(Mutual Recognition Agreement)	https://www.dco.uscg.mil/IMO/	
Cruise	Bedding Components (blankets, pillows, quilts/bedspreads, mattresses)	IMO FTP Code Part 9	Part 9 incorporates smoldering cigarette tests and propane flame test. It ensures that no progressive smoldering or flaming ignition can occur during the testing process.	Recognition - USCG or Wheelmark acceptance via MRA(Mutual Recognition Agreement)	https://www.dco.uscg.mil/IMO/	