



Tti Testing Laboratories

OVER 30 YEARS OF EXCELLENCE IN QUALITY ASSURANCE



DIVISION 08 • SPORTS GOODS & TOYS

Sports goods & toys **testing**

Every ball, every toy, verified.

Accredited toy tests to ASTM F963-23, 16 CFR and EN 71-3. Tti Labs also offers testing and inspection for sports goods and gears, and has a liaison office in Sialkot's sports goods hub.



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www.ttilabs.net



SIALKOT LIAISON OFFICE

The first and only TIC liaison office in Sialkot's leather, PPE and sports goods hub.

Opposite Mag Town Masjid, Kashmir Road, Sialkot-51310 · (052) 3573367

IN SERVICE SINCE 1995

Accredited testing, with a liaison office in Sialkot.

In 2012 Tti Labs acquired the Cleaner Production Centre (CPC) Laboratory in Sialkot with the Pakistan Gloves Manufacturers & Exporters Association (PGMEA). The move strengthened testing support for Pakistan's glove, sports goods, leather products and PPE industries.

Tti Labs runs more than 1,500 tests and processes 600+ samples a day, with a 3-day turnaround. Its accredited scope holds 544 methods and 378 parameters.

- ✦ ISO/IEC 17025 accredited testing laboratory, PNAC LAB 022
- ✦ ISO/IEC 17020 accredited inspection body, PNAC IB-006 (Tti Inspections Pvt Ltd)
- ✦ U.S. CPSC accepted conformity assessment body, Lab ID 1168
- ✦ Trusted by 1,500+ global brands
- ✦ 25,000 sq ft headquarters in Lahore; offices in Karachi, Faisalabad and Sialkot



Sports goods



Toys



Testing



Inspection



SPORTS GOODS & GEARS

Testing for Pakistan's sports goods exporters.

Tti Labs offers testing and inspection across a wide range of sports goods. It also builds customised quality assurance for other sporting equipment, the seventh family.

US\$ 424.3 m

Sports goods exports, July–June 2025-26 (provisional)

+10.1%

On 2024-25 (US\$ 385.5 m)

4.7 m dozen

Footballs exported, 2025-26

Footballs

US\$ 256.7 m
Other sports goods

US\$ 108.1 m
Sports gloves

US\$ 59.6 m

Source: Pakistan Bureau of Statistics, Export_June-2026 and release statement, item 31 Sports goods. Sports goods were 1.4% of Pakistan's US\$ 30,139 m total exports in 2025-26 (share derived from PBS values). Gloves here are the sports goods line; PBS reports leather gloves separately.

Seven families, from bagpipes to sports balls.

Division 08 lists seven families of sports goods & gears, plus toys. Tti Labs offers testing and inspection for each, and customised quality assurance for other sporting equipment.



Sports balls

Footballs and other match and training balls



Cricket equipment

Balls, bats and pads for cricket



Boxing equipment

Gloves and pads for boxing



Medical balls

Weighted balls for strength training



Bags

Sports and kit bags



Bagpipes

Bagpipes and their parts



Goalkeeper gloves follow the PPE route. Protective gloves for football goalkeepers are a glove family in Tti Labs' PPE division (Division 03), the one-stop CE certification solution.

PNAC ROW · LEATHER / FOOTWEAR / GLOVES

Physical tests for leather and glove materials.

Tti Labs' PNAC row for leather, footwear and gloves lists 15 physical tests. The table shows nine of them: the leather tests plus glove sizing and dexterity. The EN 388 glove and ISO 20344/20345 safety footwear tests serve PPE.

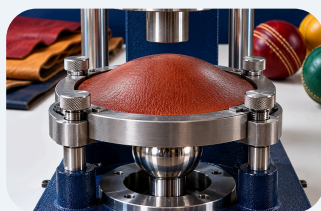
TEST	METHOD
Thickness	ISO 2589:2016
Tensile strength & elongation	ISO 3376:2020
Tear load, single & double edge	ISO 3377-1:2011 · ISO 3377-2:2025
Distension & surface strength (ball burst)	ISO 3379:2024

TEST	METHOD
Abrasion, rotating drum	ISO 4649 (2010 & 2024)
Flex resistance (flexometer)	ISO 5402-1:2022 · SATRA TM 55
Water resistance, flexible leather	ISO 5403-1:2025
Glove sizing & dexterity	EN ISO 21420:2020+A1:2024



Thickness

ISO 2589:2016



Ball burst

ISO 3379:2024



Rotating drum abrasion

ISO 4649



Flex resistance

ISO 5402-1:2022

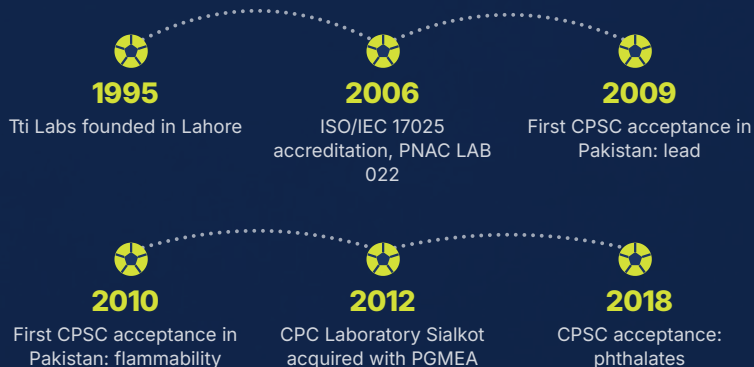


"Ball burst" names a leather grain test, not a test of inflated balls. PNAC accredits each method on the row for leather, footwear and gloves.

U.S. CPSC ACCEPTED • LAB ID 1168

Pakistan's first CPSC-accepted lab.

Tti Labs was Pakistan's first third-party lab accepted by the U.S. CPSC for lead and flammability testing. Today it is a CPSC conformity assessment body for consumer product safety and restricted substances.



TOY SERVICES

- Torque and tension tests to ASTM F963-23 and 16 CFR 1500
- Sharp point and sharp edge tests to 16 CFR 1500.48 and 1500.49
- Small parts to 16 CFR 1501
- Total lead, lead in paint and phthalates to CPSC methods
- Element migration to EN 71-3:2019+A2:2024





CPSIA • 16 CFR

U.S. toy rules, matched to Tti Labs' methods.

Under 16 CFR 1250.2, each toy must meet all applicable provisions of ASTM F963-23. The CPSIA adds lead limits for children's products and phthalate limits for toys and child care articles.

REQUIREMENT	U.S. REFERENCE	METHOD ON TTI LABS' SCOPE
Total lead in substrates	CPSIA Section 101	CPSC-CH-E1001-08.3 (metal) • CPSC-CH-E1002-08.3 (non-metal)
Lead in paint & surface coatings	16 CFR Part 1303	CPSC-CH-E1003-09.1
Phthalates content	CPSIA Section 108	CPSC-CH-C1001-09.4 • ISO 14389:2022
Small parts (choking hazard)	16 CFR Part 1501	Small parts cylinder
Sharp points & sharp edges	16 CFR 1500.48 & 1500.49	16 CFR 1500.48 • 1500.49
Torque & tension	16 CFR 1500.50, .51, .53	ASTM F963-23
Tracking labels	CPSIA Section 103	Label verification*

* Service; not on the PNAC accredited scope.

★ 100 ppm

Total lead content by weight, any part of a children's product

CPSIA §101(a)(2)(C), from 14 Aug 2011

★ 90 ppm

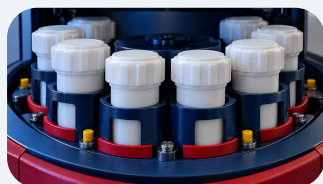
Lead in paint and similar surface coatings (0.009%)

16 CFR 1303.1, from 14 Aug 2009

★ 0.1%

Each of DEHP, DBP, BBP, DINP, DIBP, DPENP, DHEXP and DCHP in children's toys and child care articles

16 CFR 1307.3



Acid digestion

CPSC-CH-E1002-08.3



Total lead

CPSC-CH-E1001-08.3



Lead in paint

CPSC-CH-E1003-09.1



Phthalates

CPSC-CH-C1001-09.4



ASTM F963-23 • 16 CFR 1500 • 1501

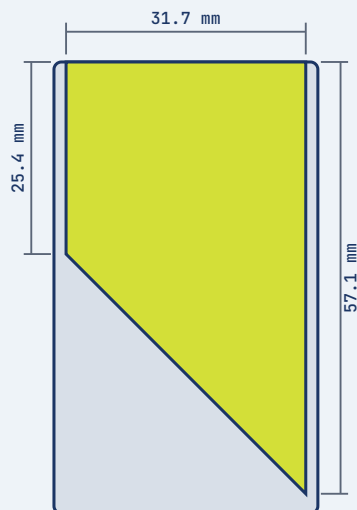
Use and abuse testing for toys.

Torque and tension tests simulate use and foreseeable abuse, as 16 CFR 1500.50 describes. Sharp point, sharp edge and small parts tests then check for hazards. Tti Labs' PNAC toys row lists all five, plus element migration (p. 09).

TEST	METHOD
Torque test	ASTM F963-23 • 16 CFR 1500.50, .51, .53
Tension test	ASTM F963-23 • 16 CFR 1500.50, .51, .53
Small parts cylinder	16 CFR 1501

TEST	METHOD
Sharp point	16 CFR 1500.48
Sharp edge	16 CFR 1500.49

THE SMALL PARTS CYLINDER



16 CFR 1501.4, Figure 1.
Drawn at actual size when
printed at 100%.

- Applies to toys and articles for children under 3 years (36 months)
- An article that fits entirely, in any orientation and uncompressed, fails
- Pieces that come off in use and abuse testing get the same check

TORQUE & TENSION BY AGE GROUP

AGE GROUP	TORQUE	TENSION
18 months or less 16 CFR 1500.51	2 in-lb 2.30 kg-cm	10 lb 4.55 kg
Over 18, not over 36 months 16 CFR 1500.52 <i>Context only, not on Tti Labs' scope</i>	3 in-lb 3.46 kg-cm	15 lb 6.80 kg
Over 36, not over 96 months 16 CFR 1500.53	4 in-lb 4.60 kg-cm	15 lb 6.80 kg

Force goes on a part a child can grasp with thumb and forefinger or teeth. The torque builds within 5 s and holds for 10 s, in both directions. Tension pulls parallel to the part, then at 90 degrees. Source: 16 CFR 1500.51–1500.53, paragraphs (e) and (f).



Torque test

16 CFR 1500.51, .53



Tension test

16 CFR 1500.51, .53



Sharp point

16 CFR 1500.48



Sharp edge

16 CFR 1500.49



EN 71-3:2019+A2:2024 • REGULATION (EU) 2025/2509

19 elements, three limits each.

Migration limits depend on the toy material. Tti Labs tests migration of certain elements to EN 71-3:2019+A2:2024, an accredited method.

● Dry, brittle, powder-like or pliable ● Liquid or sticky ○ Scraped-off

ELEMENT		0.001	0.1	10	1,000	100,000	mg/kg, log scale	★	DRY ★	LIQUID ★	SCRAPED
Cr VI	Chromium (VI)	●	●	○					0.02	0.005	0.053
Sn org.	Organic tin		●	●	○				0.9	0.2	12
Cd	Cadmium		●	●	○				1.3	0.3	17
Pb	Lead		●	●	○				2.0	0.5	23
As	Arsenic		●	●	○				3.8	0.9	47
Hg	Mercury		●	●	○				7.5	1.9	94
Co	Cobalt		●	●	○				10.5	2.6	130
Cr III	Chromium (III)		●	●	○				37.5	9.4	460
Se	Selenium		●	●	○				37.5	9.4	460
Sb	Antimony		●	●	○				45	11.3	560
Ni	Nickel		●	●	○				75	18.8	930
Cu	Copper		●	●	○				622.5	156	7,700
B	Boron		●	●	○				1,200	300	15,000
Mn	Manganese		●	●	○				1,200	300	15,000
Ba	Barium		●	●	○				1,500	375	18,750
Al	Aluminium		●	●	○				2,250	560	28,130
Zn	Zinc		●	●	○				3,750	938	46,000
Sr	Strontium		●	●	○				4,500	1,125	56,000
Sn	Tin		●	●	○				15,000	3,750	180,000

Limits in mg/kg: Regulation (EU) 2025/2509, Appendix, Part A, point 1. They do not apply where a toy's accessibility, function, volume or mass clearly excludes any risk from sucking, licking, swallowing or prolonged skin contact. The Regulation applies from 1 Aug 2030; Directive 2009/48/EC applies until then. Values are limits, not test results.



REGULATION (EU) 2025/2509 ON THE SAFETY OF TOYS

The new EU toy rules ban the intentional use of PFAS and ten bisphenols.

**12 Dec 2025**

Published in the Official Journal

1 Jan 2026

Entry into force; Articles 28–44 and 49–55 apply

1 Aug 2030

Regulation applies; Directive 2009/48/EC repealed

1 Feb 2031

EC type-examination certificates under the Directive stay valid until this date, unless they expire earlier

PFAS

The Regulation prohibits the intentional use of per- and polyfluoroalkyl substances in toys.

Annex II, Part III, point 5

Bisphenols

The Regulation prohibits the ten bisphenols in Part D of the Appendix, bisphenol B among them. Bisphenol A keeps its own migration limit, 0.005 mg/l.

Annex II, Part III, point 6 · Appendix, Part A, point 3

N-nitrosamines

Migration limit 0.01 mg/kg, and 0.1 mg/kg for N-nitrosatable substances, for toys under 36 months that go in the mouth. Other toys under 36 months, mouthed toys from 36 months and balloons: 0.05 and 1 mg/kg. Finger paints, slimes and putties: 0.02 and 1 mg/kg.

Appendix, Part A, point 2

METHODS ON TTI LABS' ACCREDITED SCOPE · PNAC LAB 022 REV. 09

Migration of certain elements

EN 71-3:2019+A2:2024

PNAC row: Toys

Total lead, metal & non-metal

CPSC-CH-E1001-08.3 · CPSC-CH-E1002-08.3

PNAC row: Textile accessories

Lead in paint & coatings

CPSC-CH-E1003-09.1 · 16 CFR 1303

PNAC row: Textile accessories

Phthalates

ISO 14389:2022 · CPSC-CH-C1001-09.4

PNAC row: Textiles & related products

Bisphenols A, B, S, F

ISO 11936:2023 (LC-MS/MS)

PNAC row: Textile, leather & chemical

PFAS

ISO 23702-1:2023 · CEN/TS 15968:2010 · EN 17681:2025

PNAC row: Textile, leather & chemical

Total fluorine

ASTM D7359 · EN 14582 · EN 17813

PNAC row: Textiles & related products

Cadmium extractability

BS EN 1122:2001

PNAC row: Plastics, plastisol prints

PAH

ISO 16190:2021 · AfPS GS 2019-01

PNAC row: Textile, leather & chemical

PNAC accredits each method for the product row shown. Only EN 71-3 and the mechanical tests sit on the toys row. ISO 11936 covers bisphenols A, B, S and F; of these, only bisphenol B is in Part D.

ISO/IEC 17020 · SPORTS & RECREATION

Booked in 24 hours, reported in the **next 24.**

Tti Labs' inspection coverage includes sports and recreation goods: balls and boxing gloves. It offers eight inspection stages, from sample picking to loading supervision.



AQL-based sampling and custom QC protocols. Also: sample evaluation and product review, defect analysis and root cause investigation, post-delivery inspection support and product labeling compliance.

WORK WITH US

01

Quotations.

Quotations for testing and inspection, by email.

quotations@ttilabs.net

02

Customer portal.

Submit requisitions, track samples and retrieve reports online.

etrnf.ttilabs.net

03

Accredited testing.

ASTM, CPSC, EN and ISO methods in Tti Labs' laboratories.

ISO/IEC 17025

04

Report.

Test results in a 3-day turnaround; inspection reports within 24 hours.

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Tti Testing Laboratories



Every ball, every toy, verified.

For exporters, manufacturers and regulated industries, compliance is market access. Tti Labs accelerates it through independent verification. Confidence, Verified.

ISO/IEC 17025 Accredited

ISO/IEC 17020 Inspection

U.S. CPSC Accepted · Lab ID 1168

Sialkot liaison office

111 786 001



www.ttilabs.net
quotations@ttilabs.net
marketing@ttilabs.net



Lahore

Head Office

347-S Quaid-e-Azam
Industrial Estate,
Kot Lakhpat, Lahore-54770

(92-42) 111 786 001



Karachi

3rd Floor, Plot No. 7c,
Sunset Commercial St.
No. 1, Phase 4, DHA,
Karachi-75500

(92-21) 111 786 001



Faisalabad

Office # 145, 1st Floor
Centre Point Plaza,
Jaranwala Road,
Faisalabad-38000

(041) 8733001



Sialkot

Leather, PPE & sports goods
hub

Opposite Mag Town Masjid,
Kashmir Road, Sialkot-51310

(052) 3573367

Images are AI-generated illustrations; they do not show Tti Labs premises, clients or tested products. PNAC accredits the listed methods under LAB 022 Rev. 09, unless marked as a service. Ask Tti Labs to confirm the current scope and edition.

