

**CV Norms of "Sub Assembly of OUTER JACKET & REVERSIBLE INNER JACKET (WITH A PACKING POUCH) OF COAT COMBAT (DIGITAL) CAMOUFLAGE PRINT NYLON 6,6**

"Under the subject Sub-Assembly item, the firm has to manufacture component (i) Outer Jacket and (ii) Reversible Inner Jacket which may be attached/detached to Outer Jacket (with a packing pouch) strictly as per the Prov. Specification No. **"PROV/IND/TC/4987 With Amendment No.-1" AND as per scope of work Annexure A-1."**

ITEM/JOB WORK	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENT	
	ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE
Sub Assembly of Coat Combat Digital Print (outer jacket & reversible inner jacket (with packing pouch) as per scope of work Annexure A-1	<p>1. Fabric cutting Table &amp; Fabric cutting machines</p> <p>2. Single Needle Lock Stitch Sewing Machine -200 nos. (minimum)</p> <p>3. Arrangement for Metallic Snap Fastener Fixation</p> <p>4. Cutting arrangement/equipment for cutting of Tapes, hook &amp; loop fasteners, crepe elastic.</p> <p>5. The firm must possess all the essential manufacturing &amp; testing facilities {as per the attached CV Norms} for manufacturing all basic input materials:-</p> <p>a. Outer camouflage fabric (sandwich fabric) Outer Jacket (Appendix 1) (04 Pages)</p> <p>b. Outer camouflage fabric without fleece (Appendix 2) (02 Pages)</p> <p>c. Elbow Patch fabric (outer Jacket) (Appendix 2) (02 Pages)</p> <p>d. Inner Lining -half body (outer Jacket) (Appendix 3) (01 Page)</p> <p>e. Inner lining -sleeve ,half body, hood (outer jacket) (Appendix 4) (02 Pages)</p> <p>f. Fabric body (inner reversible Jacket) (Appendix 2) (02 Pages)</p> <p>g. Inner Filing Material (polyfill) of inner reversible jacket.) (Appendix 5) (01 Pages)</p> <p>6. The firm must also possess all the essential manufacturing &amp; testing facilities of garniture materials (as per Specification No. "PROV/IND/TC/4987 With Amendment No.-1) as per the attached CV Norms:-</p> <p>a. Injection molded Plastic slide fasteners (Appendix 6) (02 Pages)</p> <p>b. Metallic slide fasteners (Appendix 7) (02 Pages)</p> <p>c. Zipper Coil slide fasteners (Appendix 8) (02 Pages)</p> <p>d. CFC polyester PU coated (Waterproof ) slide fasteners (Appendix 9) (02 Pages)</p> <p><b>OR</b></p> <p>The firm must have notarized agreement/tie up with the firm(s) who must possess all the essential manufacturing &amp; testing facilities {as per the</p>	---	Measuring Tape	---

	<p>attached CV Norms} for manufacturing all basic input materials:-</p> <ol style="list-style-type: none"> <li>a. Outer camouflage fabric (sandwich fabric) Outer Jacket (Appendix 1) (04 Pages)</li> <li>b. Outer camouflage fabric without fleece (Appendix 2) (02 Pages)</li> <li>c. Elbow Patch fabric (outer Jacket) (Appendix 2) (02 Pages)</li> <li>d. Inner Lining -half body (outer Jacket) (Appendix 3) (01 Page)</li> <li>e. Inner lining -sleeve ,half body, hood (outer jacket) (Appendix 4) (02 Pages)</li> <li>f. Fabric body (inner reversible Jacket) (Appendix 2) (02 Pages)</li> <li>g. Inner Filing Material (polyfill) of inner reversible jacket.) (Appendix 5) (01 Pages)</li> </ol> <p>The firm must have notarized agreement/tie up with the firm(s) who must possess all the essential manufacturing &amp; testing facilities of slide fasteners as per the attached CV Norms (as per Specification No. "PROV/IND/TC/4987 With Amendment No.-1) :-</p> <ol style="list-style-type: none"> <li>a. Injection molded Plastic slide fasteners (Appendix 6) (02 Pages)</li> <li>b. Metallic slide fasteners (Appendix 7) (02 Pages)</li> <li>c. Zipper Coil slide fasteners (Appendix 8) (02 Pages)</li> <li>d. CFC polyester PU coated (Waterproof ) slide fasteners (Appendix 9) (02 Pages)</li> </ol> <p><b>Note:-Physical Capacity Verification of the vendor alongwith notarized agreement/tie up firms (wherever applicable) will be carried out.</b></p>			
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**Encl.- As above**

CV Norms of Fabric Nylon 6,6 Sandwich with Polyester fleece digital camouflage print 300 GSM width 150 cm (min.)

Item Code	Item	Specification	Applicable CV norms
2025002235	Fabric Nylon 6,6 Sandwich with Polyester Fleece Digital Camouflage Print 300GSM width 150cm. (min)	Fabric Nylon 6,6 Sandwich with Polyester Fleece Digital Camouflage Print 300GSM width 150cm. (min). As per Provisional Specification No. PROV/IND/TC/4983 with Amendment No.1 & Appendix 'A1' of Proy Specification No. PROV/IND/TC/4987 with Amendment No.1	(i)CV Norms for "COATED AND LAMINATED FABRICS VARIOUS " (Annexure- E) issued by TCLHQ, Kanpur vide letter No. TCLHQ/QA/Revised CV Norms/2023-24 Dt. 28.11.2023.  & (ii) In case, the firm is not having all the essential manufacturing & testing facilities for fleece fabric as per CV Norms for "Polyester Fleece (various : size & colour)" (Appendix- A0002)} , The firm must have notarized legal tie up with the firm(s) who must possess all the essential manufacturing & testing facilities {as per CV Norms for "Polyester Fleece (various : size & colour)" (Appendix- A0002)}

Encl.- As above

## CV NORMS FOR COATED AND LAMINATED FABRICS VARIOUS

This documents list out the essential plant and machinery requirement of coated and laminated fabrics various. This documents also list out the essential test equipment requirement of coated and laminated fabrics various.

**Scope of Norms is applicable to all types of coated and laminated fabrics on any substrate**

Essential Plant and Machinery Requirement:-

Preparatory and Weaving Process:-

1. Winding machine
2. Beam Warping Machine
3. Shuttle less looms capable of weaving 100% synthetic fabrics

Processing Machines: - (Wherever applicable)

1. HTHP Dyeing Machine  
OR  
High Temperature High Pressure (HTHP) Jet Dyeing or any advanced machine.  
OR  
Pad Dry and Thermosol on Loop Agers  
OR  
Pad Dry and thermosol on Hotflue or any advanced machine.
2. Printing:- (Wherever applicable)
 

a) Engraving Department/Exposure Plant	}	OR FLASH AGER MACHINE
b) Rotary Printing Machine		
c) Loop Ager/Ageing Machine		
d) Oxidation and washing		
3. Calendaring Machine
4. Stenter

**Coating/Laminating Machine:-**

1. Coating/Laminating Machine: As per requirement.
2. Integrated coating cum laminating machine, wherever applicable
3. Stenter/Curing Machine: As per requirement.

Note:-

1. In case of non-availability of weaving and dyeing/printing set up, firm must have valid legal tie up of 03 years with other firm having weaving and Dyeing/printing set up. Legal agreement documents will be submitted by the firm applying for registration.
2. An undertaking by the firm having legal agreement for the weaving facilities will be submitted in the requisite format to agree that in the case of securing the order against a tender enquiry, firm will submit the documentary evidence in the form of invoices/e-way bills for utilizing the weaving facility with the legal tie up firm.
3. If the firm does not possess any of the essential Plant & Machinery, then it should not be recommended for registration.
4. Firm must possess valid pollution consent/clearance certificate from respective State Pollution Control Board.

**Essential Test Equipments:-**

1. Conditioning Chamber.
2. Weighing Balance.
3. Measuring scale/Measuring tape

4. Tensile Strength tester
5. Thread Counter
6. Laundrometer
7. Perspirometer
8. Crockmeter
9. Light fastness Tester
10. Twist Tester
11. Air Permeability Tester
12. Thickness Tester
13. Material Confirmation test facility
14. Tear Strength Tester
15. pH Meter
16. Spray rating Tester
17. Moisture Vapour Transmission Tester
18. Flex Tester
19. Test facility for resistance to low temperature
20. Test facility for nature of material and coating
21. Hydrostatic Pressure Head Tester
22. Test facility for accelerated ageing
23. Test facility for Blocking

Note:-

1. Outsourcing arrangement with NABL accredited lab is allowed only for the test parameter such as Colour fastness to Light/Moisture Vapour Transmission Tester. In this regard, registering firm shall submit a letter issued from NABL accredited lab to the firm that they are undertaking testing of samples received from the firm and the test parameter is within their scope of accreditation. If the firm does not possess any of the essential test equipments as per requirement of specification except the parameters for which outsourcing from NABL accredited lab has been permitted, then it should not be recommended for registration.
2. Controlled Atmosphere of Laboratory for humidity & temperatures is an essential requirement.
3. The above list of test equipment is illustrative in nature which may or may not be relevant for certain type of fabric. Therefore at the time of registration process, the requirement of test equipment in accordance with test parameters in the specification and the test equipment shall have required range to test the required parameters, to be checked from the firm's submitted documents.
4. Firms to give the declaration for supplying the materials with the same legal tie up firm (Wherever legal tie-up has been permitted) having validity of legal tie up for minimum 03 years.
5. At the time of supply of material by the firm having secured a contract, firm should forward the necessary documents like e-way bill, commercial invoice issued by legal tie up firm along with the firm's own invoice so as to authenticate/verify the receipt of material from the same legal tie up firm.
6. Vendor shall also give an undertaking in the prescribed format regarding complete understanding of specification requirement and other requirement as mentioned in the item.
7. In case of falsification of documents and other instances, firm will be De-registered for the period of 03 years for entire range of products for any category.
8. CV norms are generic in nature and are to be used as criteria for consideration of any firm registered for any item of a particular category. Therefore, if a firm is registered for any item, it will be considered as registered for all the similar items (as notified) falling under that CV norms category.

**CV Norms for Polyester Fleece (various : size & colour)**

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SL. NO	ITEM	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS		REMARKS
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE	
01.	Polyester Fleece of various size & colour	Knitting Machine HTHP Dyeing Machine Raising Machine Shearing Machine Stenter		Condition Chamber Weighting Balance Shrinkage Test facility Digital pH Meter Laundrometer Bursting Strength Tester	*Light fastener Tester	*The firm should have agreement with NABL accredited lab for testing of this parameter.

This documents list out the essential plant and machinery requirement of coated and laminated fabrics various. This documents also list out the essential test equipment requirement of coated and laminated fabrics various.

**Scope of Norms is applicable to all types of coated and laminated fabrics on any substrate**

Essential Plant and Machinery Requirement:-

Preparatory and Weaving Process:-

1. Winding machine
2. Beam Warping Machine
3. Shuttle less looms capable of weaving 100% synthetic fabrics

Processing Machines: - (Wherever applicable)

1. HTHP Dyeing Machine  
OR  
High Temperature High Pressure (HTHP) Jet Dyeing or any advanced machine.  
OR  
Pad Dry and Thermosol on Loop Agers  
OR  
Pad Dry and thermosol on Hotflue or any advanced machine.
2. Printing:- (Wherever applicable)
  - a) Engraving Department/Exposure Plant
  - b) Rotary Printing Machine
  - c) Loop Ager/Ageing Machine
  - d) Oxidation and washing } OR FLASH AGER MACHINE
3. Calendaring Machine
4. Stenter

**Coating/Laminating Machine:-**

1. Coating/Laminating Machine: As per requirement.
2. Integrated coating cum laminating machine, wherever applicable
3. Stenter/Curing Machine: As per requirement.

Note:-

1. In case of non-availability of weaving and dyeing/printing set up, firm must have valid legal tie up of 03 years with other firm having weaving and Dyeing/printing set up. Legal agreement documents will be submitted by the firm applying for registration.
2. An undertaking by the firm having legal agreement for the weaving facilities will be submitted in the requisite format to agree that in the case of securing the order against a tender enquiry, firm will submit the documentary evidence in the form of invoices/e-way bills for utilizing the weaving facility with the legal tie up firm.
3. If the firm does not possess any of the essential Plant & Machinery, then it should not be recommended for registration.
4. Firm must possess valid pollution consent/clearance certificate from respective State Pollution Control Board.

**Essential Test Equipments:-**

1. Conditioning Chamber.
2. Weighing Balance.
3. Measuring scale/Measuring tape

4. Tensile Strength tester
5. Thread Counter
6. Laundrometer
7. Perspirometer
8. Crockmeter
9. Light fastness Tester
10. Twist Tester
11. Air Permeability Tester
12. Thickness Tester
13. Material Confirmation test facility
14. Tear Strength Tester
15. pH Meter
16. Spray rating Tester
17. Moisture Vapour Transmission Tester
18. Flex Tester
19. Test facility for resistance to low temperature
20. Test facility for nature of material and coating
21. Hydrostatic Pressure Head Tester
22. Test facility for accelerated ageing
23. Test facility for Blocking

Note:-

1. Outsourcing arrangement with NABL accredited lab is allowed only for the test parameter such as Colour fastness to Light/Moisture Vapour Transmission Tester. In this regard, registering firm shall submit a letter issued from NABL accredited lab to the firm that they are undertaking testing of samples received from the firm and the test parameter is within their scope of accreditation. If the firm does not possess any of the essential test equipments as per requirement of specification except the parameters for which outsourcing from NABL accredited lab has been permitted, then it should not be recommended for registration.
2. Controlled Atmosphere of Laboratory for humidity & temperatures is an essential requirement.
3. The above list of test equipment is illustrative in nature which may or may not be relevant for certain type of fabric. Therefore at the time of registration process, the requirement of test equipment in accordance with test parameters in the specification and the test equipment shall have required range to test the required parameters, to be checked from the firm's submitted documents.
4. Firms to give the declaration for supplying the materials with the same legal tie up firm (Wherever legal tie-up has been permitted) having validity of legal tie up for minimum 03 years.
5. At the time of supply of material by the firm having secured a contract, firm should forward the necessary documents like e-way bill, commercial invoice issued by legal tie up firm along with the firm's own invoice so as to authenticate/verify the receipt of material from the same legal tie up firm.
6. Vendor shall also give an undertaking in the prescribed format regarding complete understanding of specification requirement and other requirement as mentioned in the item.
7. In case of falsification of documents and other instances, firm will be De-registered for the period of 03 years for entire range of products for any category.
8. CV norms are generic in nature and are to be used as criteria for consideration of any firm registered for any item of a particular category. Therefore, if a firm is registered for any item, it will be considered as registered for all the similar items (as notified) falling under that CV norms category.

**CV Norms for Polyester Fleece (various : size & colour)**

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SL. NO	ITEM	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS		REMARKS
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE	
01.	Polyester Fleece of various size & colour	Knitting Machine HTHP Dyeing Machine Raising Machine Shearing Machine Stenter		Condition Chamber Weighting Balance Shrinkage Test facility Digital pH Meter Laundrometer Bursting Strength Tester	*Light fastener Tester	*The firm should have agreement with NABL accredited lab for testing of this parameter.

**CV NORMS FOR 100% SYNTHETIC FABRICS VARIOUS**

This documents list out the essential plant and machinery requirement of 100% Synthetic fabrics various. This documents also list out the essential test equipment requirement of 100% Synthetic fabrics various.

**Essential Plant and Machinery Requirement:-**

Preparatory and Weaving Process:- (\*See Note below)

1. Winding machine
2. Beam Warping Machine
3. Shuttle less looms capable of weaving 100% synthetic fabrics

Processing Machines:- (Wherever applicable) (\*See Note below)

1. HTHP Dyeing Machine  
OR  
High Temperature High Pressure (HTHP) Jet Dyeing or any advanced machine.  
OR  
Pad Dry and Thermosol on Loop Agers  
OR  
Pad Dry and thermosol on Hotflue or any advanced machine.
2. Calendaring Machine
3. Special Finish Application (Silicone finish etc.) (Wherever applicable)
  - a) Three Bowl padding Mangle
  - b) Drying Range
  - c) Curing/Polymerizer
4. Stenter

Note:-

1. If the firm does not possess any of the essential Plant & Machinery, then it should not be recommended for registration.
2. Firm must possess valid pollution consent/clearance certificate from respective State Pollution Control Board.
- 3\*. For Parachute fabric, weaving and processing set up is mandatory. For other fabrics the firm shall have processing facility as mandatory and for weaving, it may have legal agreement valid for minimum 03 years period with the firm having weaving capability. Legal agreement documents will be submitted by the firm applying for registration.
4. An undertaking by the firm having legal agreement for the weaving facilities will be submitted in the requisite format to agree that in the case of securing the order against a tender enquiry, firm will submit the documentary evidence in the form of invoices/e-way bills for utilizing the weaving facility with the legal tie up firm.

**Essential Test Equipments:-**

1. Conditioning Chamber
2. Weighing Balance
3. Measuring scale/Measuring tape
4. Tensile Strength tester
5. Thread Counter
6. Laundrometer
7. Perspirometer
8. Crockmeter
9. Light fastness Tester
10. Twist Tester
11. Air Permeability Tester (if required as per specification)
12. Thickness Tester

13. Material Confirmation test facility
14. Tear Strength Tester
15. pH Meter
16. Flex meter for resistance to flexing
17. Hot Air Oven

Note:-

1. Outsourcing arrangement with NABL accredited lab is allowed only for the test parameter such as Colour fastness to Light. In this regard, registering firm shall submit a letter issued from NABL accredited lab to the firm that they are undertaking testing of samples received from the firm and the test parameter is within their scope of accreditation. If the firm does not possess any of the essential test equipments as per requirement of specification except the parameters for which outsourcing from NABL accredited lab has been permitted, then it should not be recommended for registration.
2. Controlled Atmosphere of Laboratory for humidity & temperatures is an essential requirement.
3. The above list of test equipment is illustrative in nature which may or may not be relevant for certain type of fabric. Therefore at the time of registration process, the requirement of test equipment in accordance with test parameters in the specification and the test equipment shall have required range to test the required parameters, to be checked from the firm's submitted documents.
4. Firms to give the declaration for supplying the materials with the same legal tie up firm (Wherever legal tie-up has been permitted) having validity of legal tie up for minimum 03 years.
5. At the time of supply of material by the firm having secured a contract, firm should forward the necessary documents like e-way bill, commercial invoice issued by legal tie up firm along with the firm's own invoice so as to authenticate/verify the receipt of material from the same legal tie up firm.
6. Vendor shall also give an undertaking in the prescribed format regarding complete understanding of specification requirement and other requirement as mentioned in the item.
7. In case of falsification of documents and other instances, firm will be De-registered for the period of 03 years for entire range of products for any category.
8. CV norms are generic in nature and are to be used as criteria for consideration of any firm registered for any item of a particular category. Therefore, if a firm is registered for any item, it will be considered as registered for all the similar items (as notified) falling under that CV norms category.

CV Norm of INNER-FILLING INSULATION MATERIAL (OUTER JACKET)

SL. NO	ITEM	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS		REMARKS
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE	
01.	INNER FILLING INSULATION MATERIAL (OUTER JACKET)	<ol style="list-style-type: none"> <li>Suitable Manufacturing facility for making Thermo Plastic Polymer insulation Bating Sheet</li> <li>Facility to attach Non-woven scrim (liner) fabric</li> <li>Cutting</li> <li>Winding</li> </ol>	Non-Woven scrim (liner) fabric making facility	<ol style="list-style-type: none"> <li>Nature of Material test facility</li> <li>Conditioning Chamber</li> <li>Thickness Tester</li> <li>Test facility for Thermal Insulation (Clo Valve)</li> <li>Weighing Balance</li> <li>Compression Recovery Test Facility</li> <li>Tensile strength Tester</li> <li>Test facility for Resistance to Blocking</li> </ol>		

## Appendix- 6

### CV Norms for Slide Fasteners various Injection Molded Zippers, Prov Specification NO. PROV/IND/TC/4987 and Amendment No.1

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ITEM	END USE	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS	
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE
Slide Fasteners (Injection Molded)	Coat Combat Digital Print	<ul style="list-style-type: none"> <li>• Hi-speed Needle Loom</li> <li>• Heat Setting Machine/calendering Machine</li> <li>• High Temperature, High Pressure, Dyeing Machine</li> <li>• Washing &amp; Drying Machine</li> </ul>		Chain Cross wise Strength Tester Test Method – JIS-S-3015 Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084 Opening & Closing Force Tester Test Method – JIS-3015, ASTM-D- 2061	<ul style="list-style-type: none"> <li>• Colour fast to perspiration</li> <li>• C.F. to light</li> <li>• Or suitable arrangement with NABL Lab for testing of this parameter</li> <li>• C.F to sea water</li> <li>• C.F. to washing</li> <li>• Col test to organic solvents</li> </ul>
		<ul style="list-style-type: none"> <li>• Injection Molding Machine for teeth making</li> <li>• Slider &amp; puller assembly attachment Machine</li> <li>• Pin &amp; Box attaching Machine</li> <li>• Top Stop attaching Machine</li> <li>• Gapping Machine</li> <li>• 'T' cutting machine</li> </ul>		Top Stop Holding Strength Tester Test Method – JIS-3015, ASTM-D- 2062 Slider Lock Strength Tester Test Method – JIS-S-3015	
		<ul style="list-style-type: none"> <li>• Die Casting Machine/pressing machine</li> <li>• Slider, puller &amp; lock-pin assembly Machine</li> <li>• Ultrasonic Film adhesive Machine</li> </ul>		Slider Pull Strength Tester Test Method – ASTM-D- 2061 Element Pull-Off Strength Tester ASTM-D-2061 Slider Puller Twist Strength Tester Test Method ASTM-D- 2061	

			<p>Element Slippage Strength Tester  Test Method ASTM-D- 2061  Bottom Stop Holding Strength Tester  Test Method – JIS-S-3015</p> <p>Film adhesion Strength Tester  Test Method – JIS-K-6854  Separable Pin Insertion Force Tester  Test Method ASTM-D- 2061</p>	Page 1/2
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Note - Physical CV will be done and firm has to demonstrate the manufacturing of the subject item.

**CV Norms for Slide Fasteners various Metallic Zippers, Prov Specification NO. PROV/IND/TC/4987 and Amendment No.1**

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ITEM	END USE	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS	
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE
Slide Fasteners (Metallic)	Coat Combat Digital Print	<ul style="list-style-type: none"> <li>Hi-speed Needle Loom</li> <li>Heat Setting Machine/calendering Machine</li> <li>High Temperature, High Pressure, Dyeing Machine</li> </ul>		Chain Cross wise Strength Tester Test Method – JIS-S-3015 Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084 Opening & Closing Force Tester Test Method – JIS-3015, ASTM-D- 2061	<ul style="list-style-type: none"> <li>Colour fast to perspiration</li> <li>C.F. to light</li> <li>Or suitable arrangement with NABL Lab for testing of this parameter</li> <li>C.F to sea water</li> <li>C.F. to washing</li> <li>Col test to organic solvents</li> </ul>
		<ul style="list-style-type: none"> <li>Wire Forming Machine</li> <li>Teeth attachment machine</li> <li>Slider &amp; puller assembly attachment Machine</li> <li>Pin &amp; Box fixing Machine</li> <li>Top Stop Fixing Machine</li> <li>Cutting Machine</li> <li>Washing &amp; Drying Machine</li> <li>Surface finishing Machine</li> <li>Electro-plating/Coating Machine</li> </ul>		Top Stop Holding Strength Tester Test Method – JIS-3015, ASTM-D- 2062 Slider Lock Strength Tester Test Method – JIS-S-3015	
		<ul style="list-style-type: none"> <li>Die Casting Machine/pressing machine</li> <li>Slider, puller &amp; lock-pin assembly Machine</li> <li>Ultrasonic Film adhesive Machine</li> </ul>		Slider Pull Strength Tester Test Method – ASTM-D- 2061 Element Pull-Off Strength Tester ASTM-D-2061 Slider Puller Twist Strength	

			Tester Test Method ASTM-D- 2061 Element Slippage Strength Tester Test Method ASTM-D- 2061 Bottom Stop Holding Strength Tester Test Method – JIS-S-3015  Film adhesion Strength Tester Test Method – JIS-K-6854 Separable Pin Insertion Force Tester Test Method ASTM-D- 2061	
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Note - Physical CV will be done and firm has to demonstrate the manufacturing of the subject item.

## Appendix- 8

### CV Norms for Slide Fasteners various Coil type Zippers, Prov Specification NO. PROV/IND/TC/4987 and Amendment No.1

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ITEM	END USE	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS	
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE
Slide Fasteners (coil type)	Coat Combat Digital Print	<ul style="list-style-type: none"> <li>• Hi-speed Needle Loom</li> <li>• Coil Forming Machine</li> <li>• Protective tape &amp; coil stitching Machine</li> <li>• Heat Setting Machine/calendering Machine</li> <li>• High Temperature, High Pressure, Dyeing Machine</li> <li>• Washing &amp; Drying Machine</li> </ul>		Chain Cross wise Strength Tester Test Method – JIS-S-3015 Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084 Opening & Closing Force Tester Test Method – JIS-3015, ASTM-D- 2061	<ul style="list-style-type: none"> <li>• Colour fast to perspiration</li> <li>• C.F. to light</li> <li>• Or suitable arrangement with NABL Lab for testing of this parameter</li> <li>• C.F to sea water</li> <li>• C.F. to washing</li> <li>• Col test to organic solvents</li> </ul>
		<ul style="list-style-type: none"> <li>• Slider &amp; puller assembly attachment Machine</li> <li>• Pin &amp; Box attaching Machine/Bottom Stop attaching Machine</li> <li>• Top Stop attaching Machine</li> <li>• Gapping Machine</li> <li>• 'T' cutting machine</li> </ul>		Top Stop Holding Strength Tester Test Method – JIS-3015, ASTM-D- 2062 Slider Lock Strength Tester Test Method – JIS-S-3015	
		<ul style="list-style-type: none"> <li>• Die Casting Machine/pressing machine</li> <li>• Slider, puller &amp; lock-pin assembly Machine</li> <li>• Ultrasonic Film adhesive Machine</li> </ul>		Slider Pull Strength Tester Test Method – ASTM-D- 2061 Element Pull-Off Strength Tester ASTM-D-2061 Slider Puller Twist Strength Tester	

			Test Method ASTM-D- 2061 Element Slippage Strength Tester Test Method ASTM-D- 2061 Bottom Stop Holding Strength Tester Test Method – JIS-S-3015  Film adhesion Strength Tester Test Method – JIS-K-6854 Separable Pin Insertion Force Tester Test Method ASTM-D- 2061	Page 1/2
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Note - Physical CV will be done and firm has to demonstrate the manufacturing of the subject item

**CV Norms for Slide Fasteners various CFC Polyester PU laminated Coil type Zippers, Prov  
Specification NO. PROV/IND/TC/4987 and Amendment No.1**

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ITEM	END USE	MANUFACTURING PLANT & MACHINERY		TEST EQUIPMENTS	
		ESSENTIAL	DESIRABLE	ESSENTIAL	DESIRABLE
Slide Fasteners (CFC Polyester PU laminated coil type)	Coat Combat Digital Print	<ul style="list-style-type: none"> <li>• Hi-speed Needle Loom</li> <li>• Coil Forming Machine</li> <li>• Protective tape &amp; coil stitching Machine</li> <li>• Heat Setting Machine/calendering Machine</li> <li>• High Temperature, High Pressure, Dyeing Machine</li> <li>• Washing &amp; Drying Machine</li> <li>• PU Film lamination Machine</li> </ul>		Chain Cross wise Strength Tester Test Method – JIS-S-3015 Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084 Opening & Closing Force Tester Test Method – JIS-3015, ASTM-D- 2061	<ul style="list-style-type: none"> <li>• Colour fast to perspiration</li> <li>• C.F. to light</li> <li>• Or suitable arrangement with NABL Lab for testing of this parameter</li> <li>• C.F to sea water</li> <li>• C.F. to washing</li> <li>• Col test to organic solvents</li> </ul>
		<ul style="list-style-type: none"> <li>• Slider &amp; puller assembly attachment Machine</li> <li>• Pin &amp; Box attaching Machine/Bottom Stop attaching Machine</li> <li>• Top Stop attaching Machine</li> <li>• Gapping Machine</li> <li>• 'T' cutting machine</li> </ul>		Top Stop Holding Strength Tester Test Method – JIS-3015, ASTM-D- 2062 Slider Lock Strength Tester Test Method – JIS-S-3015	
		<ul style="list-style-type: none"> <li>• Die Casting Machine/pressing machine</li> <li>• Slider, puller &amp; lock-pin assembly Machine</li> <li>• Ultrasonic Film adhesive Machine</li> </ul>		Slider Pull Strength Tester Test Method – ASTM-D- 2061 Element Pull-Off Strength Tester ASTM-D-2061 Slider Puller Twist Strength Tester Test Method ASTM-D- 2061	

				Element Slippage Strength Tester Test Method ASTM-D- 2061 Bottom Stop Holding Strength Tester Test Method – JIS-S-3015 Film adhesion Strength Tester Test Method – JIS-K-6854 Separable Pin Insertion Force Tester Test Method ASTM-D- 2061	
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Note - Physical CV will be done and firm has to demonstrate the manufacturing of the subject item.