

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

"Under the subject fabrication work, the firm has to manufactured 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-2."

| ITEM/JOB WORK                                                                                                      | MANUFACTURING PLANT & MACHINERY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |           | TEST EQUIPMENT |           |
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|                                                                                                                    | ESSENTIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DESIRABLE | ESSENTIAL      | DESIRABLE |
| Fabrication of Coat Combat Digital Print with arrangement of all garniture items as per scope of work Annexure A-2 | <p>1. Single Needle Lock Stitch Sewing Machine-200 nos. minimum</p> <p>2. Arrangement for Metallic Snap Fastener Fixation</p> <p>3. Cutting arrangement/equipment for cutting of mesh fabric, Tapes, hook &amp; loop fasteners, crepe elastic.</p> <p>4. The firm must possess all the essential manufacturing &amp; testing facilities of garniture (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 1) (02 Pages)</p> <p>b. Metallic slide fasteners (Appendix 2) (02 Pages)</p> <p>c. Zipper Coil slide fasteners (Appendix 3) (02 Pages)</p> <p>d. CFC polyester PU coated (Waterproof ) slide fasteners (Appendix 4) (02 Pages)</p> <p align="center">OR</p> <p>The firm must have notarized agreement/tie up up with the firm(s) who must possess all the essential manufacturing &amp; testing facilities of slide fasteners (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 1) (02 Pages)</p> <p>b. Metallic slide fasteners (Appendix 2) (02 Pages)</p> <p>c. Zipper Coil slide fasteners (Appendix 3) (02 Pages)</p> <p>d. CFC polyester PU coated (Waterproof) slide fasteners (Appendix 4) (02 Pages)</p> <p><b>Note:-Physical Capacity Verification of the vendor alongwith notarized agreement/tie up firms (wherever applicable) will be carried.</b></p> | ---       | Measuring Tape | ---       |

Encl.- As above

## Appendix- 1

### 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                                                                                                                                                                                          |                                                                                                                                                                                                                                                                            |
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|                                    |                           | 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<br>Test Method – JIS-S-3015<br>Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084<br>Opening & Closing Force Tester<br>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<br>Test Method – JIS-3015, ASTM-D- 2062<br>Slider Lock Strength Tester<br>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<br>Test Method – ASTM-D- 2061<br>Element Pull-Off Strength Tester<br>ASTM-D-2061<br>Slider Puller Twist Strength Tester<br>Test Method ASTM-D- 2061                          |                                                                                                                                                                                                                                                                            |

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|  |  |  | Element Slippage Strength Tester<br>Test Method ASTM-D- 2061<br>Bottom Stop Holding Strength Tester<br>Test Method – JIS-S-3015<br><br>Film adhesion Strength Tester<br>Test Method – JIS-K-6854<br>Separable Pin Insertion Force Tester<br>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- 2**

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

| ITEM                       | MANUFACTURING PLANT & MACHINERY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      | TEST EQUIPMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                   |
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|                            | ESSENTIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DESIRABLE            | ESSENTIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DESIRABLE                                                                                                                                                                                                                                                         |
| Slide Fasteners (Metallic) | <ul style="list-style-type: none"> <li>Hi-speed Needle Loom</li> <li>Heat Setting Machine/calendering Machine</li> <li>HTHP Dyeing 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> <li>Die Casting Machine/pressing machine</li> <li>Slider, puller &amp; lock-pin assembly Machine</li> <li>Ultrasonic Film adhesive Machine</li> </ul> | Wire Forming Machine | <ul style="list-style-type: none"> <li>Chain Cross wise Strength Tester (Test Method -JIS-S-3015)</li> <li>Zipper Reciprocating Tester for Durability (Test Method -JIS-S-3015, BS-3084)</li> <li>Opening &amp; Closing Force Tester (Test Method - JIS-S-3015, ASTM-D- 2061)</li> <li>Top Stop Holding Strength Tester (Test Method - JIS-S-3015, ASTM-D- 2062)</li> <li>Slider Lock Strength Tester (Test Method - JIS-S-3015)</li> <li>Slider Pull Strength Tester (Test Method - ASTM-D- 2061)</li> <li>Element Pull-Off Strength Tester (Test Method ASTM-D- 2061)</li> <li>Slider Puller Twist Strength Tester (Test Method ASTM-D- 2061)</li> <li>Element Slippage Strength Tester (Test Method ASTM-D- 2061)</li> <li>Bottom Stop Holding Strength Tester (Test Method - JIS-S-3015)</li> <li>Film adhesion Strength Tester (Test Method – JIS-K-6854)</li> <li>Separable Pin Insertion Force Tester (Test Method ASTM-D- 2061)</li> </ul> | <ul style="list-style-type: none"> <li>Colour fast to perspiration</li> <li>C.F. to light 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> |

**Note** - Physical CV will be done and firm has to demonstrate the manufacturing of the subject item.

## Appendix- 3

### 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                                                                                                                                                                                              |                                                                                                                                                                                                                                                                            |
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|                             |                           | 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<br>Test Method – JIS-S-3015<br>Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084<br>Opening & Closing Force Tester<br>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<br>Test Method – JIS-3015, ASTM-D- 2062<br>Slider Lock Strength Tester<br>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<br>Test Method – ASTM-D- 2061<br>Element Pull-Off Strength Tester<br>ASTM-D-2061<br>Slider Puller Twist Strength Tester<br>Test Method ASTM-D- 2061<br>Element Slippage Strength |                                                                                                                                                                                                                                                                            |

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|  |  |  | Tester<br>Test Method ASTM-D- 2061<br>Bottom Stop Holding Strength<br>Tester<br>Test Method – JIS-S-3015<br><br>Film adhesion Strength Tester<br>Test Method – JIS-K-6854<br>Separable Pin Insertion Force<br>Tester<br>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- 4

### 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<br>Test Method – JIS-S-3015<br>Zipper Reciprocating Tester for Durability - JIS-3015, BS-3084<br>Opening & Closing Force Tester<br>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<br>Test Method – JIS-3015, ASTM-D- 2062<br>Slider Lock Strength Tester<br>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<br>Test Method – ASTM-D- 2061<br>Element Pull-Off Strength Tester<br>ASTM-D-2061<br>Slider Puller Twist Strength Tester<br>Test Method ASTM-D- 2061                          |                                                                                                                                                                                                                                                                            |

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|  |  |  | Element Slippage Strength Tester<br>Test Method ASTM-D- 2061<br>Bottom Stop Holding Strength Tester<br>Test Method – JIS-S-3015<br>Film adhesion Strength Tester<br>Test Method – JIS-K-6854<br>Separable Pin Insertion Force Tester<br>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.