

### WHY UPR? / ADVANTAGES OF UPR

- ✓ HIGH MECHANICAL PROPERTY
- ✓ RESISTANCE TO CHEMICAL ATTACK
- ✓ ISULATION TO HEAT AND ELECTRICITY
- LONG SERVICE LIFE

- AFFORDABLE COST
- LOW INSTALLATION / MAINTENANCE COST
- ✓ LIGHT WEIGHT AND ATTRACTIVE APPEALING AESTHETICS
- HIGH TEMPERATURE WITHSTAND

#### **WHO WE ARE**

Strongbonds Polyseal Pvt. Ltd, an ISO 9001: 2015 accredited company, is focused on the production of synthetic Unsaturated Polyester Resin (UPR) for thermosetting plastic products used in FRP/ GRP Component manufacturing as well as Non-FRP products and coatings purposes, for over 3 decades. Quality Control and Clients' satisfaction are the two primary factors for our success stories. We have strong distribution network in eastern India and beyond.

#### **PRODUCT CATEGORY**

- \* ORTHOPHTHALIC BASED UNSATURATED POLYESTER RESIN
- \* ISOPHTHALIC ACID BASED UNSATURATED POLYESTER RESIN
- \* TEREPHTHALIC ACID BASED UNSATURATED POLYESTER RESIN
- **\*** VINYLESTER RESIN.
- \* FIRE RETARDANT RESIN
- **\*** GELCOAT RESIN.
- \* ROOFLITE/SKYLITE RESINS
- \* SMC/BMC/DMC GRADE RESIN





### **Product Summary with Applications**

| PRODUCT CODE             | DESCRIPTION                                       | APPLICATION AREA |          |               |               |             |        |             |          |                |                          |
|--------------------------|---|------------------|----------|---------------|---------------|-------------|--------|-------------|----------|----------------|--------------------------|
| ORTHOPHTHALIC BA         | ASED POLYESTER RESIN SERIES                       | HAND LAY-<br>UP  | FILAMENT | RTM/<br>VARTM | PULTRUSION    | SMC/BM<br>C | DMC    | SPRAY<br>UP | CASTING  | LAMINATIO<br>N | CORROGATE<br>SHEET MAKIN |
| POLYSEAL - 100           | Orthophthalic Based Polyester Resin               | n                | ٨        | ٨             |               |             |        |             | ٨        |                |                          |
| POLYSEAL - 102           | Orthophthalic Based Polyester Resin               | n                |          | n             |               |             |        |             |          |                |                          |
| POLYSEAL- 1010           | Orthophthalic Based Polyester Resin               | n                | Λ        | ٨             |               |             |        |             | Λ        |                |                          |
| POLYSEAL- 110            | Orthophthalic Based Thixotropic Polyester Resin   | n                |          |               |               |             |        |             |          |                |                          |
| SMC/BMC/DMC POLY         | ESTER RESINS                                      |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 100 S          | Orthophthalic Based Sheet Moulding Compound Resin |                  |          |               |               | ٨           |        |             |          |                |                          |
| POLYSEAL- 103            | Orthophthalic Based Dough Moulding Compound Resin |                  |          |               |               |             | Λ      |             |          |                |                          |
| POLYSEAL- 101 S          | Isophthalic Sheet moulding compound resin         |                  |          |               |               | ń           |        |             |          |                |                          |
| POLYSEAL - 100 SP        | Terephthalic Sheet moulding compound resin        |                  |          |               |               | ۸           |        |             |          |                |                          |
| SOPHTHALIC BASED         | ANTI CORROSIVE RESINS                             |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL - 101           | Isophthalic Based Unsaturated Polyester Resin     | ń                | ń        | Λ             |               |             |        |             | ń        |                |                          |
| POLYSEAL - 111 LV        | Isophthalic Based Unsaturated Polyester Resin     | n                |          | n             |               |             |        | ٨           | n        |                |                          |
| TOOLING RESIN            |   |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL - 101(TOOLING)  | Isophthalic- NPG basedTooling Grade Resin         | ń                |          | 'n            |               |             |        |             | Λ        |                |                          |
| ROCK BOLTING RES         | IN  |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL - 101 RB        | Isophthalic Based Unsaturated Polyester Resin     |                  |          | SPECI         | ALLY DE SIGNE | D FOR RO    | CK BOI | TING AF     | PLICATIO | N              |                          |
| VINYL ESTER ANTI C       | ORROSIVE RESINS                                   |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL - 840           | Epoxy based Vinyl Ester Resin                     | n                | n        | ń             |               |             |        | ٨           | ٨        |                |                          |
| POLYSEAL - 840 (H.G.)    | Epoxy Novolac based Vinyl Ester Resin             | n                | n        | n             |               |             |        | ۸           | ٨        |                |                          |
| TEREPHTHALIC BASE        | ED POLYESTER RESIN SERIES                         |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL - 202           | Terephthalic Unsaturated Polyester Resin          | ń                | ٨        | ń             |               |             |        | ٨           | ٨        |                |                          |
| POLYSEAL - 205           | Terephthalic Unsaturated Polyester Resin          | n                | n        | n             |               |             |        | ۸           | Λ        |                |                          |
| FIRE RETARDANT RE        | IN  |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 100 FR         | Orthophthalic Fire Retardant Resin                | n                |          | ń             |               |             |        | ٨           |          |                | n                        |
| POLYSEAL- 101 FR         | Isophthalic Fire Retardant Resin                  | n.               |          | n             |               |             |        | n ·         |          |                | n                        |
| POLYSEAL- 202 FR         | Terephthalic Fire Retardant Resin                 | n                |          | ۸             |               |             |        |             |          |                |                          |
| GEL COAT RESINS          | ·   |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 100 G          | Orthophthalic Gelcoat Resin                       |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 101 G          | Isophthalic Gelcoat Resin                         | n i              |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 101 G- Tooling | Isophthalic- NPG based Tolling Gelcoat Resin      | n                |          |               |               |             |        |             |          |                |                          |
| CLEAR CAST RESIN         |   |                  |          |               |               |             |        |             |          |                |                          |
| POLYCLEAR - 107          | Orthophthalic Based Clear Cast Resin              |                  |          | SPE           | CIALLY DESIG  | NED FOR     | CLEAR  | CAST PE     | ROUCTS   |                |                          |
| PULTRUSION RESIN         |   |                  |          |               |               |             |        |             |          |                |                          |
| POLYSEAL- 204            | Terephthalic Pultrusion Grade Resin               |                  |          | SPE           | CIALLY DESIG  | NED PUL     | TRUSIC | N APPL      | ICATION  |                |                          |
| ROOFLITE/SKYLITE F       | RESINS  |                  |          |               |               |             |        |             |          |                |                          |
| POLYCLEAR- 104           | Orthophthalic Based Rooflite Resin                |                  |          |               |               |             |        | ٨           |          | Λ              | ٨                        |
|                          |   |                  |          |               |               |             |        |             |          |                |                          |
| * Resins can be tailt    | tored(Pre accelerated/ UV stabilized / P\         | /C / Pre l       | Promote  | d / Othe      | ers require   | ement)      | as pe  | r cust      | omer s   | pecific re     | quirement                |
|                          |   |                  |          |               | 1             |             |        |             |          |                |                          |
|                          |   |                  | 19       | SOPHTHAL      | IC TE         | REPHTHA     | LIC VI | NYL EST     | ER       |                |                          |





## Features of each type of UPR

| ORTHOPHTHALIC BASED POLYESTER RESIN SERIES  |   |   |  |  |  |
|---|---|---|--|--|--|
| PRODUCT GRADE   | FEATURES  | APPLICATION AREA  |  |  |  |
| POLYSEAL - 100 ORTHOPHTHALIC BASED POLYESTER RESIN  POLYSEAL - 102 ORTHOPHTHALIC BASED POLYESTER RESIN  POLYSEAL - 110 ORTHOPHTHALIC BASED POLYESTER RESIN (THIXOTROPIC ECONOMICAL GRADE) | <ul> <li>✓ HIGH GLASS FIBER         WET OUT</li> <li>✓ LIGHT WEIGHT,</li> <li>✓ HIGH STRENGTH-TO-         WEIGHT RATIO</li> <li>✓ WATER RESISTANCE</li> </ul>   | PRESSURE VESSEL BUILDING AND CONSTRUCTION SPORTS & LEISURE INTERIOR DECOR AMUSEMENT ITEMS ART RELATED ARTICLES IDOL CASTING LIGHT POLES ELECTRICAL& ELECTRONICS UV STABILIZED RESIN CAN BE USED FOR OUTDOOR APPLICATIONS.   |  |  |  |
| ANT   | ICORROSIVE RESIN SERIES   |   |  |  |  |
| ISOPHTHALIC ACID BASED POLYESTER RESIN  POLYSEAL - 101 ISOPHTHALIC BASED POLYESTER RESIN  POLYSEAL - 111 LV ISOPHTHALIC BASED POLYESTER RESIN (LOW VISCOUS)                               | <ul> <li>✓ CORROSION         RESISTANCE         AGAINST ORGANIC         SOLVENTS.</li> <li>✓ GOOD CHEMICAL AND         HEAT RESISTANCE         PROPERTY.</li> <li>✓ LIGHT WEIGHT &amp;         GOOD AESTHETICS.</li> <li>✓ EXCELLENT         MECHANICAL         PROPERTY</li> </ul>   | <ul> <li>✓ CHEMICAL EQUIPMENT         MANUFACTURING</li> <li>✓ SEWAGE PIPES</li> <li>✓ POLLUTION CONTROL         EQUIPMENTS</li> <li>✓ OFF-SHORE MARINE PLATFORMS</li> <li>✓ MINING APPLICATIONS- FOR         ROCK BOLTING (POLYSEAL- 101         RB)</li> <li>✓ JUTE REINFORCEMENT         APPLICATION ETC.</li> </ul>   |  |  |  |
| POLYSEAL - 840 EPOXY BASED VINYL ESTER RESIN  POLYSEAL - 840 (H.G.) EPOXY NOVOLAC BASED VINYL ESTER RESIN   | <ul> <li>✓ EXCEPTIONAL ANTI         CORROSIVE         PROPERTY</li> <li>✓ SUITABLE FOR HIGH         CORROSIVE         ENVIRONMENT IN         BOTH NORMAL AND         HIGH TEMPERATURE</li> <li>✓ HIGH REACTIVITY</li> <li>✓ EXCELLENT WETTING         AND BONDING TO         GLASS FIBRES</li> <li>✓ LOW SHRINKAGE</li> </ul> |   |  |  |  |
| F   | IRE RETARDANT RESINS  |   |  |  |  |
| POLYSEAL- 100 FR ORTHOPHTHALIC BASED FIRE RETARDANT RESIN  POLYSEAL- 101 FR ISOPHTHALIC BASED FIRE RETARDANT RESIN  POLYSEAL- 202 FR TEREPHTHALIC BASED FIRE RETARDANT RESIN              | <ul> <li>✓ MODERATE         MECHANICAL         PROPERTY</li> <li>✓ SUPERIOR         MECHANICAL         PROPERTY</li> <li>✓ LESS SMOKE         GENERATION</li> <li>✓ GOOD MECHANICAL         PROPERTIES</li> </ul>   | <ul> <li>✓ WIDELY USED FOR FIRE         RESISTANT APPLICATIONS IN         BOTH HAND LAY UP AND IN         HIGH FIRE HAZARDOUS ZONE.</li> <li>✓ FLAME RETARDANT PARTS         MANUFACTURING</li> <li>✓ FIRE RETARDANT LAMINATES         MANUFACTURING.</li> <li>✓ MAKING OF COMPRESSION         SHEET MOULDING</li> <li>✓ RAILWAY COACHES;         AUTOMOTIVE COMPONENTS         ETC.</li> </ul> |  |  |  |





# Features of each type of UPR

| GEL COAT RESINS   |   |   |  |  |  |
|---|---|---|--|--|--|
| POLYSEAL - 101 G ISOPHTHALIC- NPG BASED POLYESTER RESIN  POLYSEAL - 100 G ORTHOPHTHALIC BASED GELCOAT RESIN  POLYSEAL - 101 G (TOOLING) ISOPHTHALIC-NPG BASED TOOLING GRADE POLYESTER RESIN | <ul> <li>✓ EXCELLENT         WEATHERABILITY.</li> <li>✓ VERY LOW WATER         ADHESION.</li> <li>✓ HIGH COVERAGE</li> <li>✓ GOOD ABRASSION         RESISTANCE</li> <li>✓ MINIMUM SAGGING</li> <li>✓ UV STABILISED</li> <li>✓ EXCELLENT SURFACE         FINISHING</li> <li>✓ DESIRED         THIXOTROPIC LEVEL</li> </ul> | <ul> <li>✓ BRUSHABLE</li> <li>✓ IT IS USED AS A TOP COAT         RESIN. OFF-SHORE MARINE         PLATFORMS USED FOR A         SMOOTH, COLOURED, ELASTIC         AND HIGHLY GLOSSY SURFACE.</li> </ul> |  |  |  |
| RC  | OFLITE / SKYLITE RESINS   |   |  |  |  |
| POLYSEAL-104 ORTHOPHTHALIC BASED ROOFLITE RESIN   | <ul> <li>✓ MEDIUM REACTIVITY</li> <li>✓ UV STABILIZED</li> <li>✓ LOW VISCUS</li> <li>✓ HIGH GLOSSY</li> <li>✓ EXCELLENT WEATHER RESISTANCE ABILITY</li> <li>✓ GOOD COMPATIBILITY WITH FIBER REINFORCEMENT.</li> <li>✓ GOOD THERMAL STABILITY.</li> </ul>  | <ul> <li>✓ PHOTO LAMINATION</li> <li>✓ TRANSLUCENT ROOFING SHEET</li> <li>✓ DECORATIVE LAMINATES</li> </ul>   |  |  |  |
|   | SMC/BMC/DMC GRADE RES   | <br>SIN   |  |  |  |
| POLYSEAL- 100 S ORTHOPHTHALIC BASED SHEET MOULDING COMPOUND RESIN   | <ul> <li>✓ HIGH TEMPERATURE         MOULDING RESIN</li> <li>✓ GOOD SURFACE FINISH</li> <li>✓ GOOD MECHANICAL         PROPERTIES</li> </ul>  | HOT MOULD PRESS APPLICATIONS IN RAILWAY COACHES & AUTOMOTIVE COMPONENTS ETC.  |  |  |  |
| POLYSEAL- 103 ORTHOPHTHALIC BASED DOUGH MOULDING COMPOUND RESIN   | ✓ SUPERIOR<br>ELECTRICAL<br>INSULATING<br>PROPERTIES  |   |  |  |  |
| POLYSEAL- 101 S ISOPHTHALIC SHEET MOULDING COMPOUND RESIN   | ✓ LOW SHRINKAGE<br>✓ BETTER MECHANICAL<br>PROPERTIES THAN<br>ORTHOPHTHALATE<br>RESINS.  |   |  |  |  |
| POLYSEAL - 100 SP TEREPHTHALIC SHEET MOULDING COMPOUND RESIN  | ✓ EXCELLENT ELECTRICAL PROPERTIES ✓ EXCELLENT MECHANICAL AND IMPACT RESISTANCE PROPERTIES ✓ WATER RESISTANT AT ELEVATED TEMPERATURES ✓ LOW SHRINKAGE  |   |  |  |  |





### Features of each type of UPR

| TEREPHTHALIC   | ACID BASED UNSATURATED   | POLYESTER RESIN  |  |  |  |  |
|--|--|--|--|--|--|--|
| POLYSEAL - 202 TEREPHTHALIC POLYESTER RESIN  POLYSEAL - 205 TEREPHTHALIC POLYESTER RESIN | <ul> <li>✓ EXCELLENT         MECHANICAL AND         IMPACT RESISTANT         PROPERTY.</li> <li>✓ MODERATE VISCOSITY         ✓ HIGH HEAT RESISTANT         ✓ GOOD RESISTANCE TO         MILD CORROSIVE         CHEMICALS /WATER         (AT ELEVATED         TEMPERATURES) AND         SEVERAL OIL.</li> </ul> | <ul> <li>✓ SUITABLE FOR BOTH HAND LAYUP</li> <li>✓ FILAMENT WINDING</li> <li>✓ USED IN MILD CORROSIVE         ENVIRONMENT AT OPTIMAL         TEMPERATURE.</li> <li>✓ CHEMICAL STORAGE TANKS.</li> <li>✓ CHEMICAL PROCESS         <ul> <li>○ PIPELINES.</li> </ul> </li> <li>✓ WATER TANKS.</li> <li>✓ SEWAGE PIPELINES.</li> </ul> |  |  |  |  |
| PULTRUSION GRADE RESIN   |  |  |  |  |  |  |
| POLYSEAL- 204 TEREPHTHALIC PULTRUSION GRADE RESIN  | ✓ EXCELLENT  MECHANICAL  PROPERTIES  ✓ EXCELLENT WETNESS  ✓ HIGH STRENGTH  STRUCTURE   | PULTRUSION APPLICATIONS- STRUCTURAL CONSTRUCTION MATERIALS.  |  |  |  |  |
| CLEAR CAST RESIN   |  |  |  |  |  |  |
| POLYSEAL – 107<br>ORTHOPHTHALIC BASED CLEAR CASTING<br>RESIN                             | MEDIUM VISCUS  ✓ PREE ACCELERATED  ✓ CLEAR CASTING OF STATUES  | CLEAR CAS ARTICLES / STATUES ETC   |  |  |  |  |
| TOOLING GRADE RESIN  |  |  |  |  |  |  |
| POLYSEAL- 101 (TOOLING) ISOPHTHALIC – NPG BASED POLYESTER RESIN                          | <ul> <li>✓ HIGH REACTIVE HIGH<br/>MOLECULAR<br/>WEIGHTED NPG BASED<br/>RESIN</li> <li>✓ GOOD CORROSIVE<br/>RESISTANCE<br/>PROPERTY</li> <li>✓ HIGH HEAT RESISTANC</li> </ul>   | FOR PREPARATION OF UPR MOULDS.   |  |  |  |  |