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ABBREVIATIONS

| | |
|--------|--|
| A2O | Anaerobic, Anoxic and Oxidic process |
| AC | Alternating Current |
| ACB | Air Circuit Breaker |
| ADF | Average Daily Flow |
| AED | Atomic Energy Department |
| APHA | American Public Health Association |
| ASD | Adjustable Speed Drive |
| ASP | Activated Sludge Process |
| | |
| B.E.P | Best Efficiency Point |
| BFP | Belt Filter Press |
| BIS | Bureau of Indian Standards |
| BNR | Biological Nutrient Removal |
| BOD | Biochemical Oxygen Demand |
| BS | Bridges and Structures |
| BWSSB | Bangalore Water Supply and Sewerage Board |
| | |
| CBM | Condition Based Maintenance |
| CCTV | Closed Circuit Television |
| CCU | Central Control Unit |
| CD | Compact Disc |
| CDM | Clean Development Mechanism |
| CI | Cast Iron |
| CIPP | Cured-in-Place-Pipe |
| CMMS | Computerized Maintenance Management System |
| CMWSSB | Chennai Metropolitan Water Supply and Sewerage Board |
| COD | Chemical Oxygen Demand |
| CPCB | Central Pollution Control Board |
| CPHEEO | Central Public Health and Environmental Engineering Organisation |
| CPR | Cardiopulmonary Resuscitation |
| CT | Current Transformer |
| CUPS | Control of Urban Pollution Series |
| CWMS | Computerized Work Management System |
| | |
| DAF | Dissolved Air Flotation |
| DC | Direct Current |
| DEWATS | Decentralized Waste water Treatment Systems |
| DG | Diesel Generator |
| DI | Ductile Iron |
| DLP | Defect Liability Period |
| DO | Dissolved Oxygen |
| DOE | Department of Environment |
| DOH | Department of Health |

| | |
|---------|---|
| EBPR | Enhanced Biological Phosphorus Removal |
| EEBA | Emergency Escape Breathing Apparatus |
| EMB | Eosin Methylene Blue |
| Env | Environment |
| EPA | Environmental Protection Agency |
| ESP | Exchangeable Sodium Percentage |
| | |
| F/M | Food to Microorganism Ratio |
| FC | Faecal Coliform |
| FFT | Fast Fourier Transform |
| FPU | Final Polishing Unit |
| FRP | Fibre Glass Reinforced Plastic Pipes |
| | |
| GI | Galvanized Iron |
| GOD | Ground Operated Disconnection |
| GRP | Glass Fibre Reinforced Plastic |
| | |
| HDPE | High Density Polyethylene |
| HLR | Hydraulic Loading Rate |
| HMI | Human Machine Interface |
| hp | Horsepower |
| HRT | Hydraulic Retention Time |
| HT | High Tension |
| | |
| I / O | Input / Output |
| ICMR | Indian Council of Medical Research |
| ID | Internal Diameter |
| IDLH | Immediately Dangerous to Life or Health |
| IJOEM | Indian Journal of Occupational and Environmental Medicine |
| IMLR | Internal Mixed Liquor Recycle |
| IS | Indian Standards |
| | |
| JASCOMA | Japan Sewer Collection System Maintenance Association |
| JEFMA | Japan Environmental Facilities Manufactures Association |
| JICA | Japan International Cooperation Agency |
| JSWA | Japan Sewage Works Association |
| JTU | Jackson Turbidity Units |
| | |
| kVA | Kilovolt ampere |
| kW | Kilowatt |
| | |
| LEL | Lower Explosion Limit |
| LT | Low Tension |
| LWL | Low Water Level |

| | |
|-----------|---|
| MBBR | Moving Bed Bio Reactor |
| MBR | Membrane Bio Reactor |
| MCC panel | Motor Control Centre panel |
| MCC | Motor Control Centre |
| MCCB | Moulded Case Circuit Breaker |
| MCF | Membrane Cartridge Filtration |
| MF | Micro Filtration |
| MH | Manhole |
| MLD | Million Litres per Day |
| MLSS | Mixed Liquor Suspended Solids |
| MLVSS | Mixed Liquor Volatile Suspended Solids |
| MoLE | Ministry of Labour Employment |
| MoUD | Ministry of Urban Development |
| MPN | Most Probable Number |
| MSL | Mean Sea Level |
| MSW | Municipal Solid Waste |
| | |
| NA | Not Applicable |
| NF | Nano Filtration |
| NPSHA | Net Positive Suction Head Available |
| NPSHR | Net Positive Suction Head Required |
| NRCD | National River Conservation Directorate |
| NRCP | National River Conservation Plan |
| NRV | Non-Return Valve |
| NUSP | National Urban Sanitation Policy |
| | |
| O&M | Operation and Maintenance |
| OCR | Over Current Relay |
| OD | Oxidation Ditch |
| ORP | Oxidation Reduction Potential |
| OSHA | Operational Safety and Health Association |
| OSS | On-site Sanitation System |
| OTE | Oxygen Transfer Efficiency |
| OVR | Over Voltage Relay |
| | |
| PAC | Poly Aluminium Chloride |
| PAO | Polyphosphate Accumulating Organism |
| PAS | Poly Aluminium Sulphate |
| PB flume | Palmer-Bowlus flume |
| PC | Power Contactor |
| PCB | Pollution Control Board |
| PCCP | Pre-stressed Concrete Cylinder Pipe |
| PCOM | Per Capita O&M Cost |
| PD | Positive Displacement |
| pH | Potential Hydrogen |
| PHA | Poly-hydroxyalkanoates |

| | |
|-------|--|
| PLC | Programmable Logic Controller |
| PM | Planned Maintenance |
| PMC | Project Management Consultants |
| PR | Protective Relay |
| PS | Pumping Station |
| PST | Primary Settling Tank |
| PT | Potential Transformer |
| PVC | Polyvinyl Chloride |
| PWD | Public Works Department |
| PWSSB | Punjab Water Supply and Sewerage Board |
| Qty | Quantity |
| R&D | Research and Development |
| RAS | Return Activated Sludge |
| RBC | Rotating Biological Contactor |
| RCC | Reinforced Cement Concrete |
| RO | Reverse Osmosis |
| RPM | Revolutions Per Minute |
| RTD | Resistance Temperature Detector |
| SAR | Sodium Absorption Ratio |
| SASW | Spectral Analysis of Surface Waves |
| SBR | Sequencing Batch Reactor |
| SCADA | Supervisory Control and Data Acquisition |
| SCBA | Self-Contained Breathing Apparatus |
| SDB | Sludge Drying Bed |
| SF6 | Sulphur Hexafluoride |
| SLB | Service Level Benchmarks |
| SLD | Single Line Diagram |
| SLR | Solids Loading Rate |
| SOR | Surface Overflow Rate |
| SPCB | State Pollution Control Board |
| SPDP | Screen Protected Drip-Proof |
| SPS | Sewage Pumping Station |
| SRT | Solids Retention Time |
| SS | Suspended Solids |
| SST | Secondary Settling Tank |
| STP | Sewage Treatment Plant |
| SV | Sludge Volume |
| SVI | Sludge Volume Index |
| TDS | Total Dissolved Solids |
| TEFC | Totally Enclosed Fan Cooled |
| TM | Trademark |
| TMP | Transmembrane Pressure |

| | |
|-------------|--|
| TSS | Total Suspended Solids |
| TV | Television |
| TWAD | Tamil Nadu Water Supply and Drainage Board |
| UASB | Up flow Anaerobic Sludge Blanket |
| UF | Ultra Filtration |
| ULB | Urban Local Body |
| UNIDO | United Nations Industrial Development Organization |
| UP | Uttar Pradesh |
| UPJN | Uttar Pradesh Jal Nigam |
| UPS | Uninterruptible Power Supply |
| UPVC | Unplasticized Polyvinyl Chloride |
| USEPA | United States Environmental Protection Agency |
| UV | Ultraviolet |
| UVR | Under Voltage Relay |
| VCB | Vacuum Circuit Breaker |
| VFA | Volatile Fatty Acid |
| VFD | Variable Frequency Drive |
| VSS | Volatile Suspended Solids |
| VT | Voltage Transformer |
| VVVF | Variable Voltage Variable Frequency |
| WAS | Waste Activated Sludge |
| WEF | Water Environment Federation |
| WHO | World Health Organization |
| WMS | Work Management System |
| WRFs | Water Reclamation Facilities |
| WSP | Waste Stabilization Pond |
| XLPE | Cross-linked Polyethylene Insulated Cable |
| YAP | Yamuna Action Plan |
| 3 ϕ 3W | 3phase 3wire |