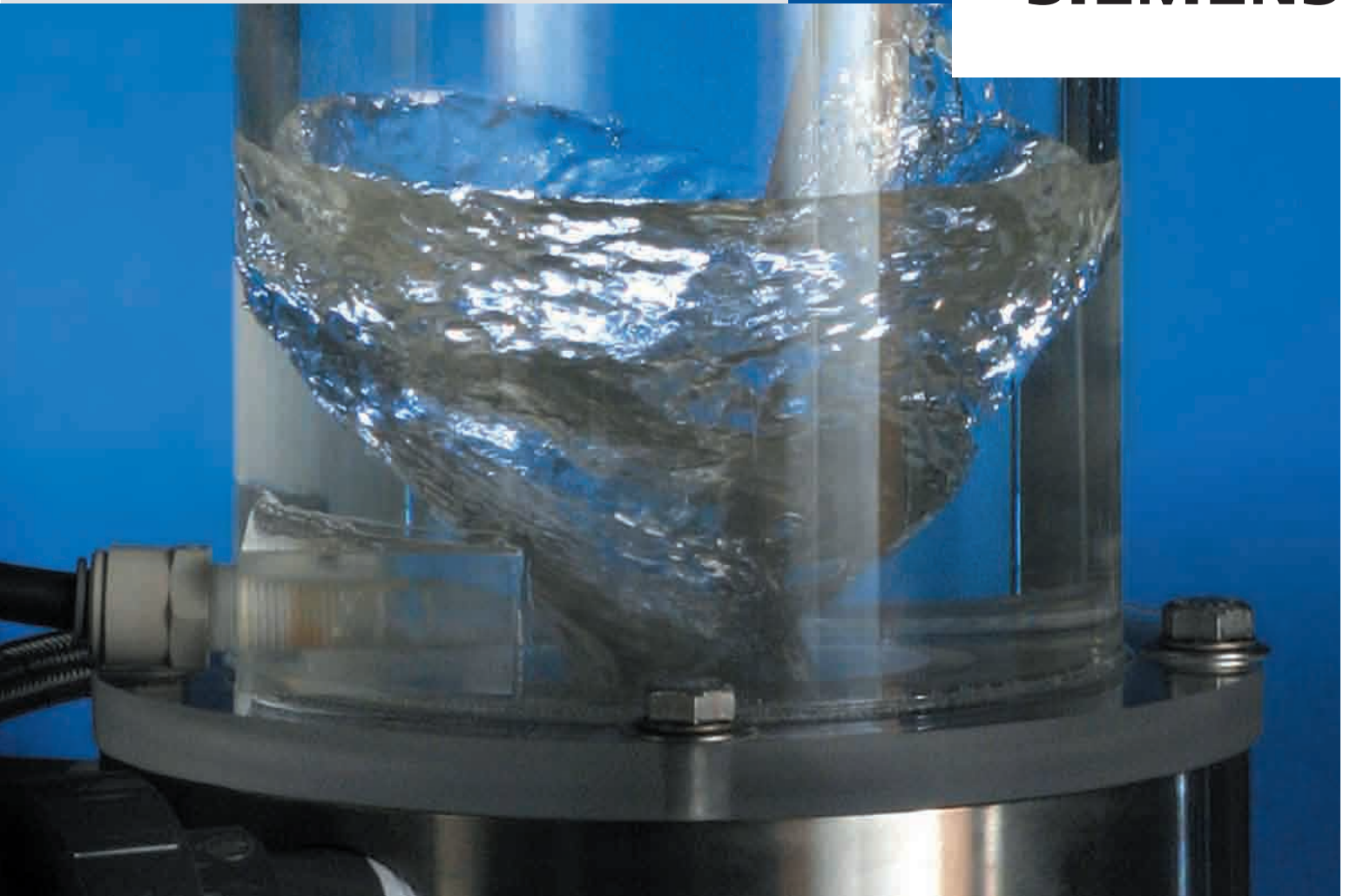


Water Technologies

PolyBlend® DP Series
Dry/Liquid Polymer
Feed Systems

SIEMENS



Innovative Solutions for Dry/Liquid Polymer Feed Applications



Unmatched Performance and Reliability

The PolyBlend® DP system is without question the finest dry polymer feed system available. It outperforms all other designs in head-to-head trials. The DP system typically reduces polymer consumption 25% or more while substantially improving polymer performance in terms of sludge dryness, solids capture, water clarity, drainage / retention, or any other measure. PolyBlend® DP systems have an unmatched reputation for reliability. While dry polymer feed systems are notoriously high maintenance items, the PolyBlend® DP Series requires the least maintenance and operates unattended for a longer interval than any other dry polymer feed system on the market.

Reduced Polymer Consumption and Improved Safety

Dissolving dry polymer in water for use in a water or wastewater treatment process is one of the most difficult tasks in chemical feed technology. Dry polymer particles are typically 100 times larger than the particles of polymer suspended in liquid polymers. Consequently, dry polymer has a greater tendency to agglomerate and requires far more mixing time than liquid polymer. During the extended mix time, the polymer is subject to damage from the rotating tank mixer. In most systems, one-quarter of the polymer is wasted in the form of “fisheyes” or broken into useless fragments. In addition, most dry polymer feed systems are housekeeping nightmares. They are not only unsightly, but can be very dangerous as spilled dry polymer can become a safety hazard.

The Process

The PolyBlend® DP polymer feed system addresses and overcomes all these difficulties with several innovations which are patented in the U.S., including the high energy disperser and low energy mix tank. Polymer makes initial contact with water in the high energy disperser. The water pressure is used as the motive force to transport the wetted polymer to the low energy mix tank. From the mix tank, the polymer is sent to a holding tank and from there, through the final feed skid to the point of application. The operation is fully automatic – all the operator has to do is supply polymer to the storage hopper.



The control system for the PolyBlend® DP system is unmatched in simplicity. A color, touch-screen display enables complete operation of all functions.

Troubleshooting is also streamlined with all alarm conditions described on the display. In field trials and start-ups, operators are quickly and confidently interfacing with the system.

A "Jewel" from the Operators' Perspective

"The PolyBlend® DP series dry polymer feed system is a 'jewel' from the operators' perspective. The operators learned rapidly and feel very comfortable with the principles of its operation. Polymer batches are replicated very closely, and the operators have not experienced variations in centrifuge performance due to unadjusted changes in polymer concentration."

Municipal Mechanical Engineer



LOW ENERGY MIX TANK WITH FEED TANK

The low energy mix tank is engineered to continue to mix the activated polymer with a low energy, low shear mixing action. Tank sizes vary based on consumption rates and application requirements.



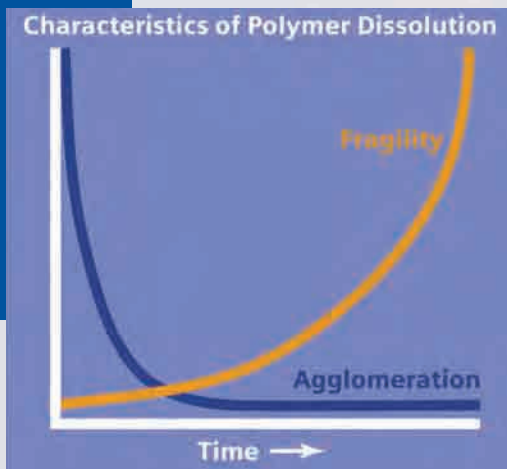
FINAL FEED SKID

Final feed skids are designed around your needs. Choose the pumps (number, type and size), the controls (manual, flow pacing, loss of flow, etc.), the materials of construction and type of post-dilution.

DRY DISPENSER SKID

The dry dispenser skid (DD4) provides the high-energy mix at the moment of initial polymer wetting. The precise dosing mechanics ensure proper dry polymer to water ratio providing consistent solution concentrations.

Precise Dosing for High-Energy Mixing at Moment of Initial Wetting

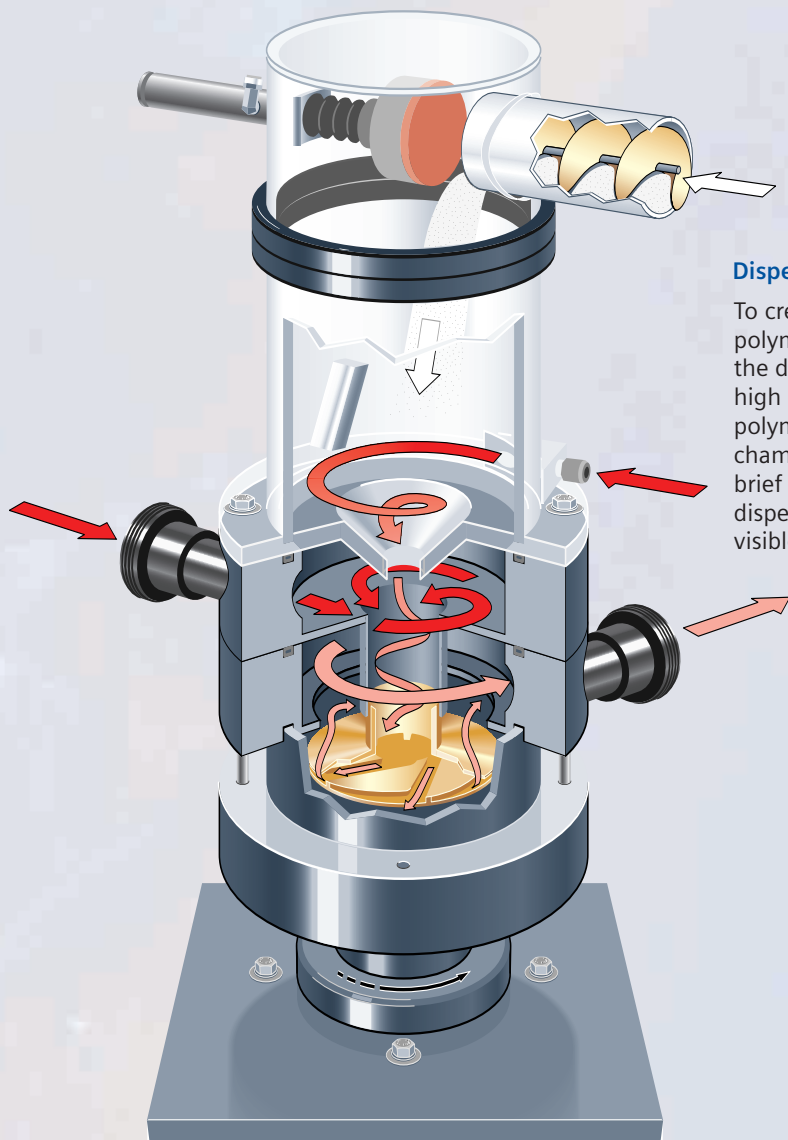


The PolyBlend® DP Series polymer feed system offers unique high energy mixing at the moment of initial wetting eliminating polymer agglomerations. During the second stage second stage, the patented hollow-wing mixer continues a low-shear mixing dynamic to further activate the polymer resulting in optimized polymer activation.

Dry Disperser Skid

The dry disperser skid accurately doses dry polymer and water into the high-energy mix chamber providing the mixing needed to properly activate the polymer. The disperser skid includes the dry polymer volumetric feeder, water control valves, and the motorized wetting system. An optional emulsion pump is also available for liquid polymer applications.



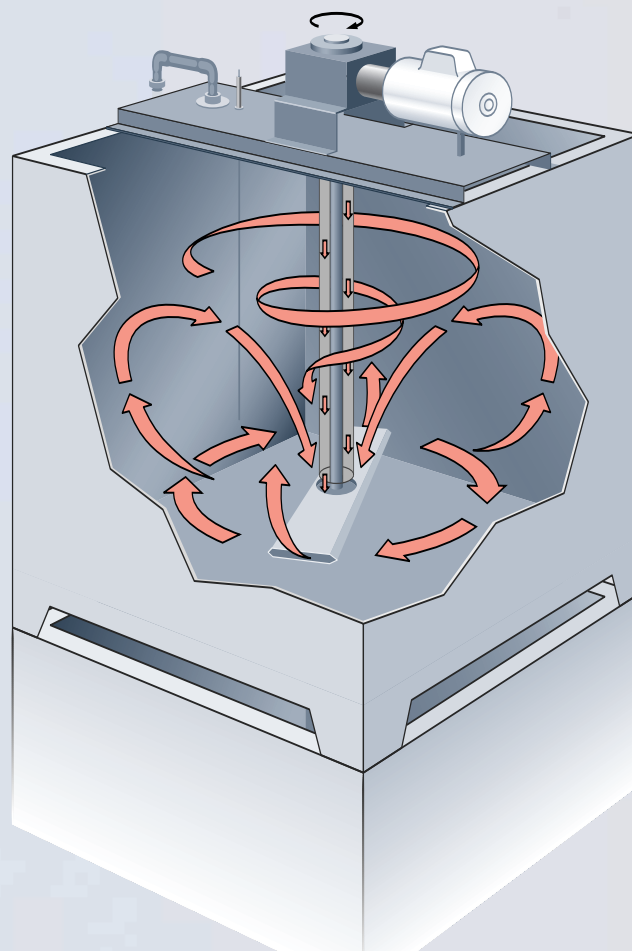


Disperser Chamber

To create the ideal environment for the first stage of polymer dissolution, crucial initial wetting occurs in the disperser. Here, polymer and water are subjected to high energy created by mechanical mixing. The dry polymer is accurately metered into the high-energy mix chamber and is properly activated with water. After brief exposure, the solution exits the high energy disperser. The point of initial polymer / water contact is visible to the operator through a clear, acrylic interface.

Low Energy Mix Tank

From the disperser, the polymer solution flows into the mix tank. Most polymer mix tanks are not uniform in their mixing energy. Agglomerations form in the portions of the tank that receive the least mixing energy while polymer chains are broken up at the tip of the rotating mixing blade. In contrast, the DP Series tank is specifically designed to be fully uniform in mixing intensity. The rotating impeller is a "hollow wing", the length of which is over half the width of the tank. The hydraulics of the system make the impeller act like a pump, continuously moving the solution vertically as well as horizontally. Moreover, the square tank design further contributes to uniformity of the mixing energy eliminating the potential for a damaging vortex. The result is no agglomerations and no broken polymer chains. In other words, no waste. Polymer costs are reduced and performance improved.



Unmatched Reputation
for Quality, Reliability
and Performance



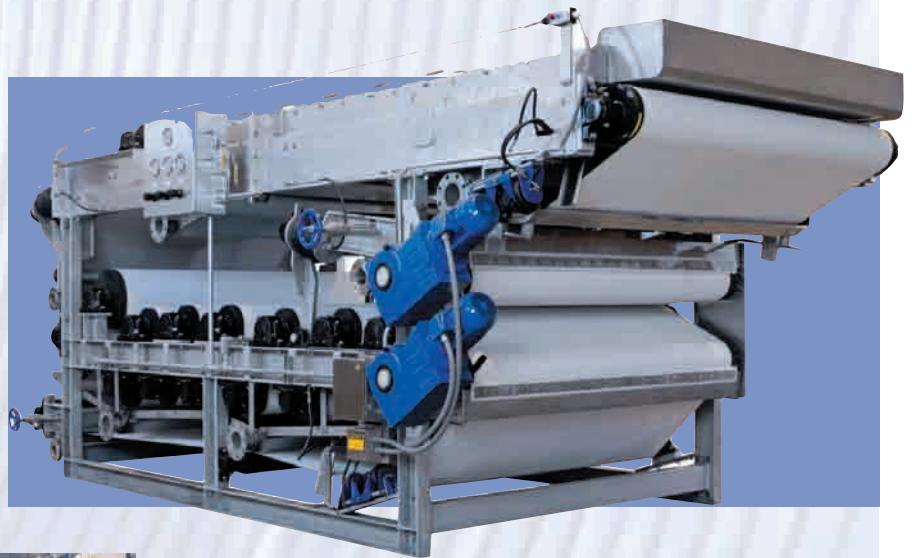
PolyBlend® Systems
are the Best Polymer
Activation Systems
Available

"The mixing technology, combined with precise controls, offers optimum polymer activation and performance."

Paper Plant Chief Engineer

Applications

PolyBlend® DP systems are utilized throughout the world for a diverse range of applications in both the municipal and industrial markets. Applications include thickening, dewatering and clarification in wastewater treatment; clarification and filtration in water treatment; and a myriad of applications in industrial processes including pulp & paper and mining industries.



Automatic, Large Volume Operation Provides Peak Performance

DP1000 / DP2000

For large water or wastewater applications, the PolyBlend® DP1000 and DP2000 systems are engineered to exceed polymer performance expectations. The DP1000 and DP2000 systems consist of the DD4 dry polymer disperser and specified mix or hold tanks to meet application requirements. Both systems are fully integrated and controlled through the latest interface technology allowing complete operation of all system parameters and functions.

The DP2000 operates in a flip-flop sequence where each tank operates as both a mix tank and a hold tank. The DP1000 system includes a mix tank and requires an optional transfer pump and hold tank for normal operation.

The DP1000 system is available with 750 to 2000 US gallons (2839 to 7571 liters) tanks and provides a dry polymer feed rate up to 83 lbs/hr (37.6 kg/hr) at a 0.5% concentration.

The DP2000 tanks are also available from 750 to 2000 US gallons (2839 to 7571 liters) and feeds polymer up to 83 lbs/hr (37.6 kg/hr) dry polymer based on a 0.5% concentration.



The PolyBlend®
System is
Engineered
To Handle the
Toughest Jobs

"The PolyBlend® DP Series outperforms all other designs in head-to-head trials."

Coal Mining Engineer

DP800

The PolyBlend® DP800 polymer feed system is an integrated chemical feed package capable of automatically preparing a homogeneous dry or liquid polymer solution for water and wastewater applications. An optional pump is required for liquid polymers. The DP800 includes the DD4 dry disperser, a stainless steel mix tank, and a gravity-fed stainless steel hold tank. The integrated controls offer unsurpassed features and enable complete operation of all functions.

The DP800 tanks hold 360 US gallons (1362.7 liters) each and feeds polymer up to 22.5 lbs/hr (10.2 kg/hr) dry polymer based on a 0.75% concentration.



Peak Polymer Performance at an Economical Price

DP500

The PolyBlend® DP500 dry polymer feed system is an integrated equipment package capable of automatically preparing a homogeneous polymer solution from dry or liquid polymers. An optional pump is required for liquid polymers. The DP500 includes the DD4 dry polymer disperser, a fiberglass mix tank, and a gravity-fed fiberglass hold tank. The color, touch-screen control interface enables complete operations of all functions including dosage rates, solution concentration, and alarm conditions.

The DP500 tanks are 160 US gallons (605.7 liters) each and feeds polymer up to 15 lbs/hr (6.8 kg/hr) dry polymer based on a 0.75% solution and 1.5 batches per hour.

DP 110

The DP110 is specifically designed to provide uniform mixing. Dry polymer and water are mixed in the vortex created by the rotating tank impeller. The unique mixing process provides maximum polymer preparation and activation. The system is designed for polymer solution concentrations up to 0.3% by weight with a maximum dry polymer feed rate up to 1.9 lbs/hr (0.86 kgs/hr).

The DP110 is controlled through an easy-to-use microprocessor-based touch screen operator interface. The LCD display enables complete operation of all functions including dosage rates, solution concentration, run and flow totalizers and alarm conditions.

The DP110 can be supplied with a number of polymer solution transfer pump options and controls options.



Choices to Meet Your Criteria

Dry Polymer

Standard models make down from 6-94 lbs/hr (2.72-42.6 kg/hr) depending on solution concentration and mixing time required.

Emulsion/Dispersion Polymer

Diaphragm Metering Pump
22 gph (83.2 lh)
35 gph (132.5 lh)
Progressive Cavity Metering Pump
10 gph (37.9 lh)
50 gph (189.2 lh)

Batch Tanks (Single or Tandem)

160 US Gallon – (606 liter)
360 US Gallon – (1363 liter)
750 US Gallon – (2839 liter)
1000 US Gallon – (3785 liter)
1500 US Gallon – (5678 liter)
2000 US Gallon – (7570 liter)

Water Supply

20 gpm (75.7 lpm) at 40 psi (2.76 bar) minimum
30 gpm (113.6 lpm) at 40 psi (2.76 bar) minimum

Air Supply

Plant System or Integral Compressor

Voltage

208/1/60 VAC/phase/Hz
240/1/60 VAC/phase/Hz
380/3/50 VAC/phase/Hz
480/3/60 VAC/phase/Hz
575/3/60 VAC/phase/Hz

Dry Polymer Handling

2.5 ft³ (.07 m³) Hopper
5 ft³ (.14 m³) Hopper
20 ft³ (.57 m³) Hopper
Bulk Bag Frame
Bulk Bag Frame with Hoist
Bag Dump Hopper
Other Combinations

Options

Low Powder Level Indication
Water Pressure Reducing Valve

Accessories

Final Feed Pumps
Final Feed Post-Dilution
Large Hold Tanks
Transfer Pumps

Engineered Polymer Systems to Meet Your Design Criteria

Test Drive a PolyBlend® Dry Polymer System at Your Facility

Contact us to arrange a demonstration and see for yourself why PolyBlend® DP systems are the best dry polymer activation system available.



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