SHEAR ROLLER MIXING SYSTEMS

High-purity, contamination-free, continuous processing of feedstocks

QUALITY MADE IN GERMANY
Special machines for your production

Plastics processing:

- Making peroxide and propellant concentrates
- Making duraplast compounds
- Making cable and floor covering mixtures

Main uses:

- Mixing
- Material recycling

They also have many other uses – from plastics production to foodstuffs.

Rubber processing :

- Processing thermoplastic rubber and polyurethane

Ceramics:

- Making ceramic injection moulding materials using various binder systems

Chemical industry:

- Making nitrocellulose colour chips
- Desensitising nitrocellulose

Powder metallurgy:

- Making MIM injection moulding substances
- Dispersion of special binders in metal powder substances

Your benefit:

- **Highly homogenous mixing** substances of medium to high viscosity
- **Very tough substances can be processed**, as can mixtures on a metal or ceramic basis (MIM and CIM uses)
- **High economic efficiency from very fine dispersion –** up to 25% of the expensive colour pigments can be saved.
- **The open shear roller system** makes ejection of liquids feasible, e.g. damp, gasses and solvents, without de-gassing equipment being needed.
- **Easy cleaning** when material is changed
- **Easy visual control** of all process stages

SHEAR ROLLER MIXING SYSTEMS

Optimal technical and financial results in processing mixtures of solids

Shear rollers are the best constantly functioning open design processing means for :

- Melting
- Homogenising
- Dispersing
- Compressing, and
- Granulating

substances of medium to high viscosity.

Our shear rollers are in use all over the world.

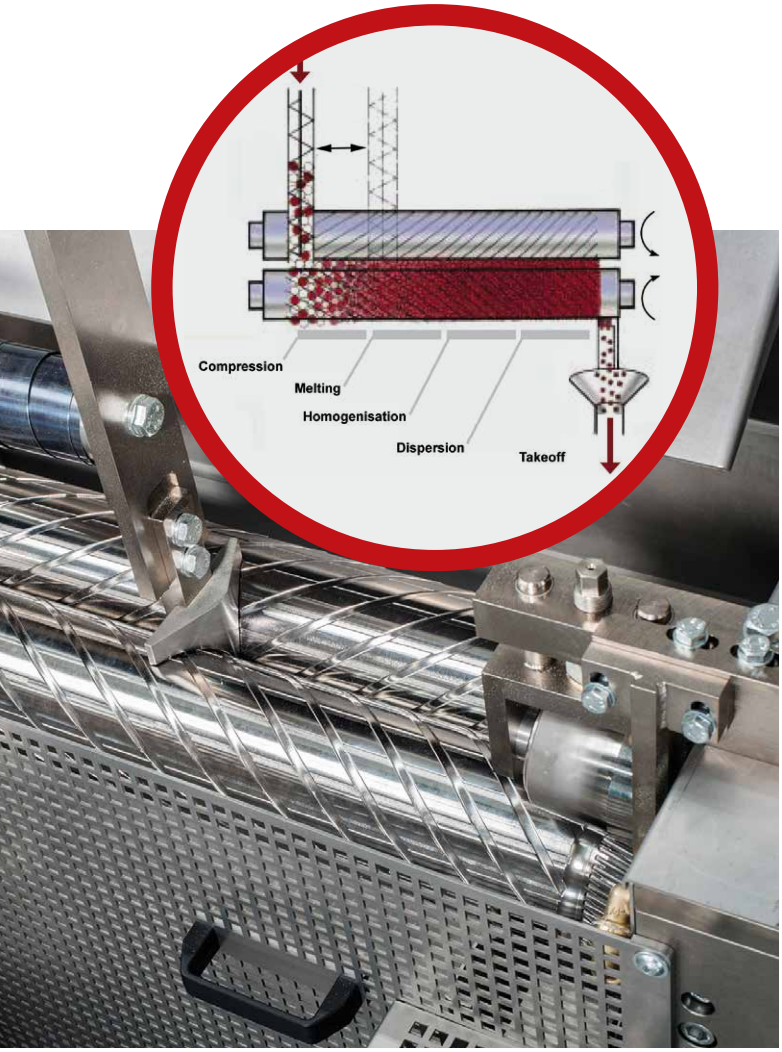
Highly homogenous mixing and granulation

In many fields processing with shear rollers mobilises hitherto unrealised potential characteristics. Intensive rolling, shearing and kneading using shear rollers yields finely dispersed particles. This in turn saves money through economical use of additional substances and excipients.

A good example is the manufacture of paint consistencies. As it's difficult to distribute paint evenly when adding it some major characteristics are neglected.

Shear rollers can improve matters here greatly. The paint particles are distributed well and all major characteristics are retained e.g., in further processing using extrusion or injection moulding. Out technology thus saves you up to 25% of pigments and other expensive materials.

SHEAR ROLLER MIXING SYSTEMS



The principle of shear rollers – from raw material to granulate

The material is processed in the gap between two contra-rotating rollers. This gap can be continuously adjusted.

The material is added by:

- Metering worm
- Dosing troughs
- Conveyor belts

The components needed (such as paints, additional substances, etc.) can be fed in individually or in separate portions. During processing of the raw material to finished granulate the mixture can be heated or cooled as required at any time. Roller temperature can be adjusted between 20 and 260 degrees Celsius for the purpose.

Heating and cooling using water or oil temperature adjustment

The roller surface temperature must be precisely controlled - an important pre-condition in producing high quality mixtures. Bellaform shear rollers therefore have two zones per roller and a total of four independently adjustable temperature zones.

Thereafter the finished material consistencies can be taken off variously:

Constant takeoff:
An endless material strip is cut by a strip cutter

.

Cutter takeoff :
For tough materials a multiple cutting wheel (cutter) is used to cut the material strips into easily handled pieces.

Granulation :
The material from the roller is pressed through the granulation ring grooving and cut at the end with a knife to cylindrical granulate.

SHEAR ROLLER MIXING SYSTEMS

Model overview:

The Bellaform models differ in production capabilities from 0.5 to 500 kg/h.

		BSW 100	BSW 135	BSW 200	BSW 300
Dimensions L x W x H	mm	1 800 x 600 x 1 300	2 500 x 1 700 x 1 300	5 300 x 1 700 x 1 200	6 000 x 2 000 x 3 000
Working height	mm	1 000	1 000	1 000	1 000
Weight	kg	ca. 950	2 000	5 000	12 500
Roller diameter	mm	80 -100	135	201	305
Roller power	kW	2 x 5	2 x 10	2 x 20	2 x 60
Approximate roller RPM	min^{-1}	20 – 120 (adjustable)	7.5 – 100	7.5 – 75	7.5 – 75
Fine gap adjustment*	mm	0.3 – 1	0.5 – 5	0.5 – 5	0.5 – 5
Maximum roller gap	mm	35	40	40	40
Electrical supply power**	kW	12	25	45	130
Scrap / scrapped parts	kg/h	2 – 12	5 – 50	15 – 150	75 - 500

* mechanical, without load
** shear roller without temperature control units

We work closely with our clients to make our projects a success.
We'd be happy to test the performance that's right for your product in our facilities.

THE WORLD'S ONLY COMPLETE SYSTEM SUPPLIER FOR CORRUGATED PIPES!

Bellaform GmbH
Marie-Curie-Straße 14
55435 Gau-Algesheim
GERMANY

info@bellaform.com
Phone: +49 6725 91925-0
Fax: +49 6725 91925-200
www.bellaform.com