

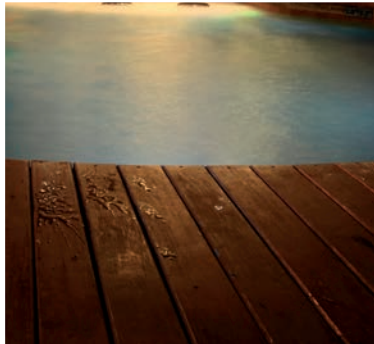
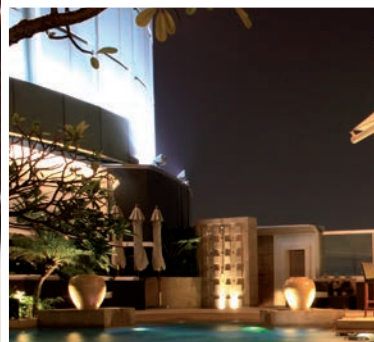
plas@mec



**Series
WPC**

**WOOD PLASTIC
COMPOSITE**





■ **WPC (PVC BASED)**

Parameters for mixing WOOD + PVC production (dryblend)



Temp. Heating Mixer: 120 -130°C

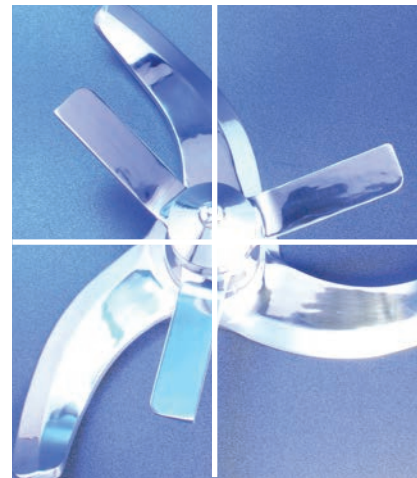
Product mixed to Dryblend (powder form)

Heating Mixer + Cooling Mixer

Double jacketed Vessel of the Cooling Mixer (for cooling water circulation)

Vacuum System required

Explosion Protection required



■ **WPC (PP/PE BASED)**

Parameters for mixing WOOD + PP/PE production (agglomerate)



Temp. Heating Mixer: 160 - 170°C

Product mixed to Agglomerate Material

Heating Mixer + Air Cooling System (max. size of Agglomerate - < 10 mm)

or

Heating Mixer + Cooling Mixer with Chopper (< 10 mm)

Double jacketed Vessel of Heating and Cooling Mixer (for cooling water circulation)

Process controlled by Special Software

Vacuum System required

Explosion Protection required

PLASMEC, a leading company in manufacturing of mixing equipment and ancillaries for plastic industry, thanks to the in depth cooperation of major extruder manufacturers and research institutes, has recently developed a new concept for mixing plants for processing wood natural fibres with plastics.

When using plasmec mixing and cooling equipment, it is possible to increase the bulk density of the components, extract the moisture

of the wood fibres and distribute the additives. After that, a suitable twin screw extruder line can extrude the profile.

Thanks to this solution, PP/PE/PVC, wood fibres, colour pigments, UV stabilisers, flame retardants and biocides can be mixed in the compound with excellent results.

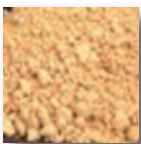
Moisture levels of up to 12% can be removed with our very good extraction process.

The mixing process consists of

feeding (either in automatic or semi-automatic mode) a batch of components.

The next step is the drying of wood fibres, mixing and agglomerating the compound in one operation with a residual moisture of less than 1%.

As a final stage agglomerates are cooled and the particle size is reduced in order to get a narrow size distribution to be suitable for storage and or conveying.



PLASMEC, after intensive technical research and trials in its development centre, has developed and designed two different mixing technologies and plants for the two principal types of wood plastic composites in common use.

TWO STEP PROCESS

STEP 1:

- Increasing the bulk density of the components, extracting the moisture of the wood fibres and distributing the additives.

STEP 2:

- Extruding the profile with a twin screw extrusion line, suitable for materials (PP or PVC) filled with wood fibres up to 80%.

ADVANTAGES

Possibility of utilizing natural fibre with a moisture content up to 15%.

Agglomerate with a residual moisture less than 1%.

The final result is an easily processable agglomerate with a constant product definition.

Product is dust free.

Free flowing agglomerate. Possibility of adding pigments into the high speed mixer.

Easily processable in extruder, kneader or injection moulding machine.

MIXING PROCESS

Feeding a batch of components consisting of:

Wood fibers

PP or PVC

Colour pigments

UV-stabilizer

Flame retardants

Biocides

(to increase fungal resistance)

Drying of the wood fibers and compound, mixing and agglomerating in one operation. (Residual moisture <1%).

Agglomerates cooling and particle size reduction to obtain a limited grain size distribution.

READY TO EXTRUDE!

Discharging into Big Bags for intermediate storage.



A short description of the different characteristics and workability of these two types of plastics materials is as follows.

PVC+PP/PE

COMBIWOOD HC

Composed of:



HEATING MIXER Type "TRM/FV"



COOLING MIXER Type "RFV"

PVC+PP/PE

COMBIWOOD RV

Composed of:



HEATING MIXER Type "TRM/FV"



COOLING MIXER Type "RFV"

PP/PE

COMBIWOOD HW

Composed of:



HEATING MIXER Type "TRM/FV"

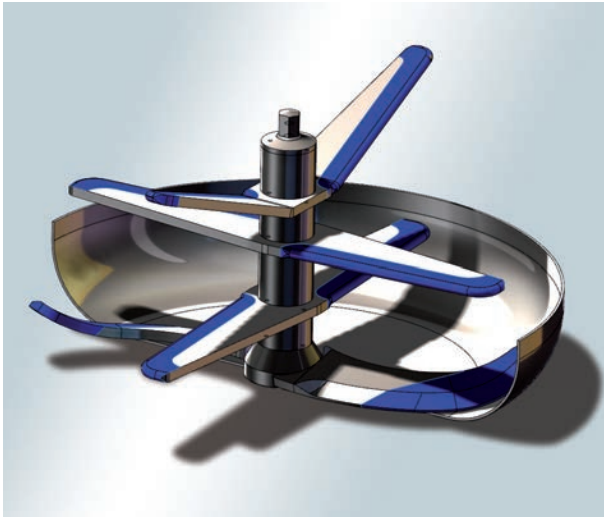


AIR COOLING SYSTEM Type "RWP"

	TOTAL CAPACITY	USEFUL CAPACITY	WOOD 50%	PP 50%	WOOD 70%	PP 30%
TRM-100	100 lts	85 lts	26 kg/batch		21,3 kg/batch	
TRM-200	200 lts	170 lts	52 kg/batch		42,6 kg/batch	
TRM-400	400 lts	340 lts	104 kg/batch		85,2 kg/batch	
TRM-600	600 lts	510 lts	156 kg/batch		127,8 kg/batch	
TRM-800	800 lts	680 lts	208 kg/batch		170,4 kg/batch	
TRM-1000	1000 lts	850 lts	260 kg/batch		213 kg/batch	
TRM-1200	1200 lts	1020 lts	312 kg/batch		255,6 kg/batch	
TRM-1500	1500 lts	1275 lts	390 kg/batch		319,5 kg/batch	
TRM-2000	2000 lts	1700 lts	520 kg/batch		420 kg/batch	

MIXER

- Vertical mixing bowl
- Mixing bowl with double jacket for liquid circulation
- Vessel insulation
- Lid in vacuum-tight construction
- Peripheral speeds up to 50 m/sec
- Easy disassembling of mixing tools
- Easy cleaning, no dead spots



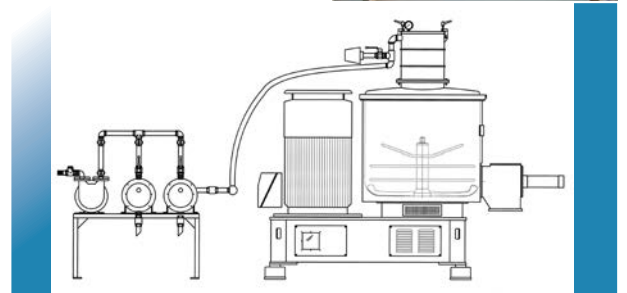
CHOPPERS

The design of the choppers ensures that the product will be quickly reduced to the desired agglomerate size.



VACUUM SYSTEM

Vacuum system to extract the moisture from wood fibers. The moisture content of approx. 16% can be reduced to < 1%.

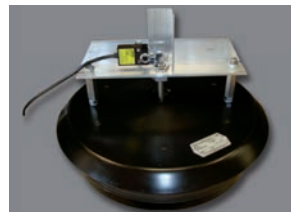


SPECIAL MIXING TOOL DESIGN

- Breaks up the fibre bundles
- Produces friction heat
- Provides good mixing properties and reduces the inevitable agglomerates to a defined size



EXPLOSION PROOF



A TESTING UNIT IS ALREADY AVAILABLE IN PLASMEC RESEARCH ROOM

WITNESS TESTING IN OUR INNOVATIVE TEST LAB



DON'T MISS THE OPPORTUNITY TO KNOW PLASMEC





plasmec

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