



ENTEK Extruders Launch into 2004 with Wood Plastic Composites in Europe

ENTEK Extruders had a very successful year in 2003 with a number of machines being commissioned across Mainland Europe and the United Kingdom. The fastest market to develop last year was the Natural Fibre Composite market in Europe and this looks likely to continue to grow during 2004. Enter have continued to show a positive presence at the fore front of this new and emerging market in Europe throughout 2003 by publishing a number of Technical papers on Wood Plastic Composites and presenting several Technical presentations at key conferences throughout the year. In January 2004, Entek have already presented a Technical paper on Natural Fibre Composites extrusion at the recent Wood Plastic Conference in Scotland hosted by the Scottish Forest Industries Cluster.

ENTEK used the Conference to show their Direct Extrusion process technology expertise in Natural Fibre Plastic Composite extrusion. ENTEK is capable of providing complete turn-key systems including bulk material handling, loss-in-weight feeders, and all required downstream equipment.



Entek offer the following line-up of extruders for WPC products:

Screw Diameter (mm)	Max. Screw Speed (rpm)	Motor Power (kw)	Max. Torque/Shaft (Nm)
53	300 – 600	56 – 112	890
73	300 – 600	150 – 300	2,375
103	300 – 400	450 – 650	7,126
133	300	up to 1,100	14,750



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Compared to a twin-screw conical counter-rotator, the ENTEK twin-screw co-rotator has more power and higher screw speeds. The screws and barrels are completely segmented, so the screw and barrel arrangement can be optimized for each customer's particular formulation. We have found that one design does not fit all of our customers – to get the best possible rates, operating stability from the extruder, we can customise the screw, and barrel configuration based on trial results in our lab.

These extruders have achieved the following rates in production:

Screw Diameter (mm)	Throughput (kgs/hr)
53	275 – 500
73	600 – 1,000
103	1200 – 2,000
133	2,750 – 3,700+ (estimated)

These rates are achieved on formulations with ingredients in these ranges:

HDPE (0.45-0.7 MFI), PP	30 - 43%
Wood or Rice Hulls	30 - 60%
Fillers	0 - 30%
Lubricants	1 - 6%
Additives	1 - 8%

ENTEK makes a constant effort to improve our WPC processing capability. Based on recent screw design work, improved volatiles removal, and enhanced operating conditions, we believe that rates in excess of 2,100 lbs/hr are possible for WPC profiles on the ENTEK 103mm extruder. ENTEK is currently designing a 133mm extruder that will have an estimated throughput of 1,200 to 3,700 lbs/hr for WPC products.



ENTEK's co-rotating twin screw WPC extruders offer the following advantages relative to a conical counter-rotating extruder:

- Resin feed can be powder, flake, or pellet.
- Wood feed can contain higher moisture because twin-screw co-rotating extruder vacuum is more efficient and multiple vacuum ports are used.
- Screws and barrels are fully segmented
 - o Only have to replace screws and barrels in localized areas of wear
 - o Screw and barrel configuration can be fully optimized
- Materials can be fed in multiple locations on the machine (main feed, side feeds, liquid injection, etc.)
- ENTEK's extruders are PLC-controlled and are supplied with a router-modem. The modem link enables ENTEK to provide remote support on demand. It is even possible to monitor and control the extruder from a remote connection using a web browser
- ENTEK has a full-service lab equipped with a 53mm extruder and profile cooling equipment for new WPC product development, optimization, etc.

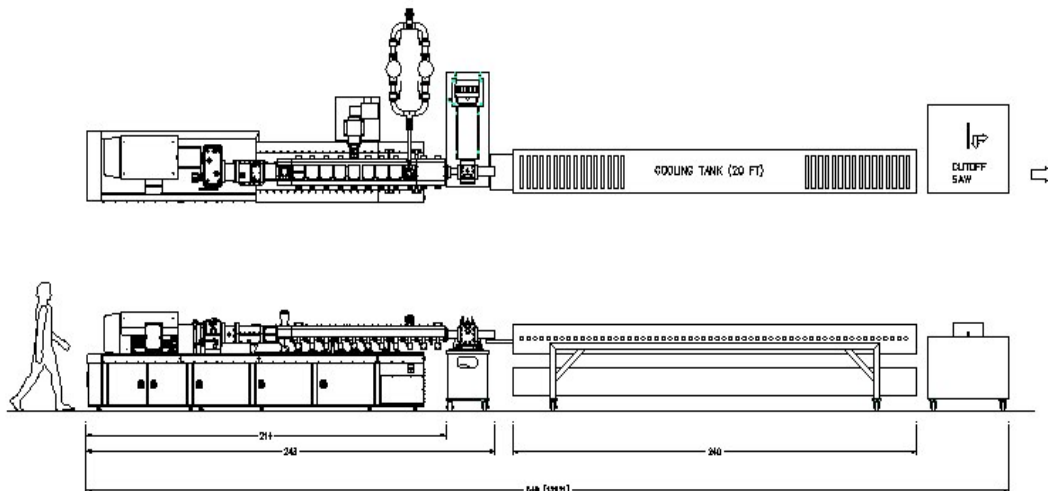
We believe that ENTEK has the best WPC extrusion lines in the world – lines that produce high quality product at industry-leading rates. ENTEK would welcome the opportunity to introduce ourselves to you and your team.

ENTEK has been specialising in direct extrusion technology since 1984 and is one of the worlds leading manufacturers of Twin-screw extruders for direct extrusion, both for sheet production or profile production

For additional information please contact:

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