

# Basic Machine Index™ (BMI)

How do we compare performance  
with only one number?

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$$\text{BMI} = \frac{\text{Total Papermachine Facility Weight in tonnes}}{\text{Total Facility Salable Average Daily Production in tonnes}}$$

## **Papermachine Facility Weight (PFW)**

The PFW includes:

- piles
- building
- all permanent materials in the building
- all permanent materials on top of the building
- all permanent materials connected to the building such as vacuum pumps and their structures
- everything beginning at stock prep through and including the winder

The PFW does not include:

- boilers
- pipe bridges or cabling from other processes or auxiliary equipment located further than fifty (50) meters from the Papermachine Facility

In the case of pipe bridges or cabling from other processes or auxiliary equipment located further than fifty (50) meters from the Papermachine Facility, any weight of these pipe bridges and cabling shall not be included outside the Papermachine Facility walls.

## **Total Facility Salable Annual Production (TFSAP)**

The TFSAP shall be determined from Sales Records and include all prime tonnes of production sold from 12:00 a.m. January 1 of the year being measured through 11:59:59 pm December 31 of the year being measured less any actual or recognized Returns for the same period, also measured in tonnes. This number is divided by either 365 or 366 days, depending on the year, in order to find the TFSAP.

### Example 1

A Papermachine Facility has been built to produce linerboard.  
The PFW is as follows:

Piles:  
1,500 tonnes  
Building:  
3,700 tonnes  
Equipment:  
1,920 tonnes  
Piping:  
150 tonnes  
Cabling:  
40 tonnes  
Total:  
7,310 tonnes

The TFSAP is as follows:

1,000 prime tonnes per day average less 2 tonnes per day average returns = 998 tonnes per day

Thus,

$$\text{BMI} = 7,310/998 = 7.3246$$

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## Example 2

A Papermachine Facility has been built to produce commercial tissue.

The PFW is as follows:

Piles:

250 tonnes

Building:

1,350 tonnes

Equipment:

700 tonnes

Piping:

90 tonnes

Cabling:

14 tonnes

Total:

2,404 tonnes

The TFSAP is as follows:

140 prime tonnes per day, no returns

Thus,

$$\text{BMI} = 2,404 / 140 = 17.1714$$

## The Beauty of BMI

A method of comparison that does not involve

1. capital costs
2. financial terms such as depreciation
3. exchange rates
4. Age

And

*A method of comparison that rewards demolition of obsolete items*

## Interested in calculating your BMI?

The Light Green Machine Project (see <http://lightgreenmachine.net/>) is looking for mills interested in calculating their BMI and placing their number in our confidential BMI data base (mills will be indicated as “Mill A”, “Mill B”, etc. and by grade; location in the world will not be identified) . All mills that participate will receive a copy of the current database for free until January 1, 2011.

If interested, please contact Jim Thompson.

Phone: +1.678.206.6010

Email: [jthompson@taii.com](mailto:jthompson@taii.com) and put “BMI” in subject line.

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