

mitech news

In this edition:

- Short cycle pressing challenges
- Part 4: Press temperature
- Freight rates



Greetings to all for this late October News Letter edition

This month we focus on short cycle pressing again. We apologise to those who do not laminate, but trust that it may give further insight to the challenges to your suppliers!

First. Freight rates



We are all facing global freight delays and freight rate increases.

Nobody escapes this so we can only encourage customers to plan and order early.

And in as large a volumes as feasible

Short cycle melamine pressing challenges – Continued.

In May we looked at machinery:

- Press frames
- Press platens
- Press pads or cushions:
- Press plates

With the focus on damage and condition
 The focus was on damage and condition
 The focus was on damage and condition
 Focus on maintenance and condition

Then in June we discussed materials:

- Substrates Quality and defects
- Impregnated paper Quality and storage

In August we examined press process settings

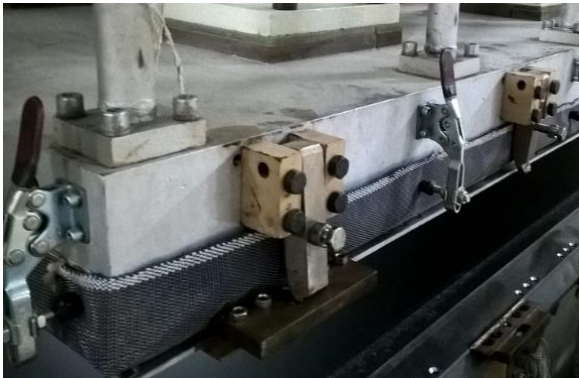
- Pressure All are related in some way
- Temperature
- Time

Now we finish on press temperature in detail

SHORT CYCLE PRESS TEMPERATURES

An often-asked question is what press temperature should I use?

Another question is why does a temperature setting on one press not give the same result with another press ?

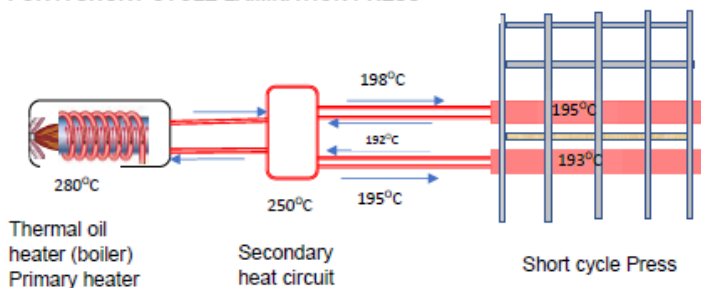


For those who may be newer to the process, I trust that the following gives an insight to press temperature settings and process control. For those who are familiar with press temperature control, I invite critique and discussion. The obvious temperature to specify is the setting as set on the control panel, These readings are as measured by a temperature probes set about mid-thicknesses of top and bottom heating platens.

We follow the temperatures from the thermal oil heater (or boiler), to the panel surface.

We should all know that the relatively high temperature of hot thermal oil from the boiler to the primary heat circuit has no influence on quality, as long as there is sufficient capacity to support platen temperature control.

BASIC THERMAL OIL HEAT PLANT SCHEMATIC FOR A SHORT CYCLE LAMINATION PRESS



The secondary heating ring circuit automatically bleeds hot oil into the oil returning from the press platens to maintain constant platen heat

Hot platens are of course constantly yielding heat to cold boards and the atmosphere around the press. This is according to:

- Ambient air temperature and humidity
- Platen insulation
- Thermal oil pipe insulation
- Production area drafts
- Temperature of raw boards
- Production rate

The platen temperature varies within the alloy steel thickness and area. Highest temperature is of course around the platen oil channels (drillings).

Cooler is near the caul plate surfaces .

The most critical temperature is of course the press caul plate surface, This may be about 30°C lower than the oil feeding the platens while pressing continually.

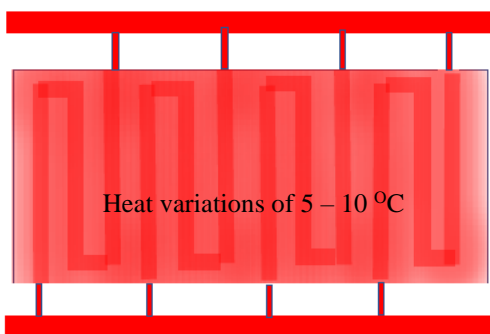
The press cushions (or pads) are fundamental to panel surface quality.

Cushions have evolved over several decades to nowadays where they are mostly a woven mat of a flexible elastomer and heat conductive copper and/or brass fibres. They serve three main functions:

- Even distribution of pressure
- Controlled rate of heat to the impregnated paper.
- Even distribution of heat over the panel surface.

With most modern presses rapid transfer of heat is necessary for short press times.

For older presses a slower heat transfer may be preferred to avoid pre-cure surface blemishes, caused by resin cure before the heat softens resin can finish flowing. And before allowing vapour bobbles to condense under pressure



The press cushions (or pads) are fundamental to panel surface quality.

Nowadays they are a woven mat of a flexible elastomer and heat conductive copper or brass fibres. They serve three main functions:

- Even distribution of pressure
- Controlled rate of heat to the impregnated paper.
- Even distribution of heat over the panel surface.

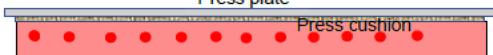
Thermal oil Inlet



Hot platen surface with press cushion and caul



Press plate



With most modern presses rapid transfer of heat is necessary for short press times. For older presses a slower heat transfer may be preferred to avoid pre-cure surface blemishes, caused by resin cure before the heat softens resin can finish flowing. And before allowing escaping vapour “bubbles” to condense under pressure.

The most critical temperature is the caul plate surface temperature at the panel surface.

It requested, Mitech can supply information on procedure for accurate spot checks during production, or a continual reading.

Engineered wood panels

- Conveyors
- Chippers
- Resin plants
- Chip washers
- Plywood presses
- Mat Spray Systems

Panel Lamination

- Paper impregnation lines
- Short Cycle Presses
- HPL Presses
- Veneer presses
- Press Pads
- Press Caul Plates
- Paper winders
- Paper Cutters
- Protective Foil application

Additives

- Release Agents
- Wetting Agents
- Hardeners
- Dyes and Pigments

CONTACT: Mike Green

Mitech Panel Services Pty Ltd
7, Maguire Place
Dardanup West
Australia
WA, 6236

Ph: 61 897281828
Mob: 61 435651615
mike@mitechps.com
lois@mitechps.com
www.mitechps.com



An Experienced Wood panel machinery and materials supplier

We are a reputed wood panel machinery and associated materials supplier. Our years of experience in the market, dealing with various clients, each with unique requirements have driven us to increase knowledge and skill

We always endeavour to meet your expectations.

Contact us any time for any query related to our products. We are happy to assist you.