

CONFIDENTIAL



Steel Mill Products Division
Research and Development Department

May 1973

1) Profax Boards

Beginning Wednesday, May 16, 1973, a production run was scheduled on K-4 machine using EP-5290. The recipe is asbestos and paper free. The run was smooth and was continued until Monday, May 21, 1973, when the machine started easily. Monday the production was stopped. The boards were shipped to Copperweld and the results are favorable. Jack Thebo said that the material is dustier than Profax 31. We have to correct it.

Tuesday, May 22, 1973, the Armco-Middletown boards #341 and #342 were tried on Mark III K machine. Two pallets (one of each) were produced with 12.0% green scrap versus 10.0% for Profax 31.

The boards presented some surface cracks. For that reason, under laboratory conditions, we nailed a board directly on such a crack. The new material (EP-5290) is strong and elastic enough as not to be affected by the surface cracks (the sample is in our lab). We have not received, as yet, the results from Armco-Middletown. During these experimental runs we have found that the recipe is lacking in green strength. For that reason, we added to the regular recipe, a small amount of Bentonite (0.5%). The green scrap was lowered from 4-5% to 2-2.3% for a 24 hr. period.

Monday, June 4, 1973, Corrugated B machine is scheduled to start under regular production basis employing the tool #685 for Copperweld. During May we tried to reduce the filtered solid which passes through the screen. The usual screen which is used in production is 55 X 36 openings/sq. in. Under laboratory scale, we used two other screens: 80 X 60 and 100 X 92 openings/sq. in.

The forming time was:

- | | |
|-------------|------------------|
| 1. 55 X 36 | 4.1 and 4.2 sec. |
| 2. 80 X 60 | 4.1 and 4.2 sec. |
| 3. 100 X 92 | 4.1 and 4.0 sec. |

FOSECO 2219

The solid material collected into the water, passed through was:

1. 2.57 g/600 ml of water = 0.43%
2. 1.75 g/600 ml of water = 0.29%
3. 0.90 g/600 m. of water = 0.15%

For that reason, we asked Tooling Dept. to supply a belt screen having 80 X 60 openings/sq. in. considering that the amount of openings will satisfy production requirements about durability. This belt screen is scheduled to arrive by June 8, 1973 and our intention is, if Armco-Middletown will accept our new material, to designate a Mark III machine with this type of belt screen which will work continuously for U.S.S.-Fairless and Armco-Middletown. We also have the intention of asking Tooling Dept., after the four cavities tool will be on K-4 machine, to re-screen the two cavities tool with 80 X 60 openings/sq. in. screen and to experiment with it.

In conclusion, we suppose that this EP-5290 modified recipe is able to work properly on Mark III, Corrugated and K-4 machines. However we visualize some psychological problems because as each new material is introduced in production, it needs for a period of time special attention from production, quality control and our people.

The EP-5290 modified recipe has, in production, a density variation from 0.62 - 0.73 g/cc. versus 0.75 - 0.82 g/cc for Profax 31. Then, on the volume basis, the new recipe is 18% more expansive than Profax 31.

2) Proflex Boards

We are under way with a Proflex type material which seems to be as good as our competitors materials and we can visualize a production run for Monday, June 11, 1973, employing tool #571 and #572 for Republic-Warren.

3) Premix Profax at Bethlehem-Johnstown

The average scrap rate for the month was 0.25% compared with 0.46% last month. The transverse strength and density were 303 psi and 0.90 g/cc respectively. No major technical problems during the month.

4) Stopper Rod Protective Sleeves

Field trials with the usage of Kalmin 5000 as stopper rod protective sleeves were successful at Tennessee Forging.

The sleeves were produced by Foundry Services as requested by us.