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Fibreboards

Fibreboards were developed in USA and Sweden in the 1920s and 30s and first produced in Australia in 1937 from bagasse, the crushed cane from which sugar has been extracted. The plant, owned by the Colonial Sugar Refining Co. Ltd. (CSR), was located at Mackanade in North Queensland and made a 'semi-hardboard' (density 500-700 kg/m³) using bagasse de-fibred in a disc refiner after a mild pressure treatment with calcium hydroxide solution. The first true hardboard plant in Australia was started by the Masonite Corporation (Australia) Ltd. at Raymond Terrace in NSW in 1938 and used chips from local eucalypts de-fibred by steaming at high pressure for a short period and then exploding through a narrow orifice (the Mason 'gun'). The product was formed by draining a water suspension of the fibres, after disc refining, through an endless wire mesh and then pressing and drying, to give a density in the approximate range 900-1100 kg/m³.

In 1939 CSR started a plant in Sydney to make a low density insulating board (soft-board) from bagasse by a process^[79] similar to that used at Mackanade which was then closed down. Because of the high post-war demand for building materials an Asplund Defibrator hardboard line was added in 1947 based on established Swedish technology, the essential differences from the insulating board line being that defibration was done under steam pressure and the formed sheet pressed and dried to a higher density. With the increasing cost of bagasse -largely due to freight -wood was progressively introduced as the main hardboard raw material. Initially eucalypt was used, but this was later replaced by radiata pine, then starting to become available from plantations. Eventually radiata pine also replaced bagasse in insulating board manufacture although the well-established product name Cane-ite was retained.

APPM, which had started pulp and paper production from eucalypts at Burnie, Tas. in 1938, was next to enter the hardboard field, with plants at Burnie in 1952 and Ipswich, Qld. in 1958, both using the Asplund defibration process on eucalypt. When APPM ordered their first plant the Swedish supplier had had little experience with eucalypts and APPM had to adapt it considerably to compensate for the abrasive and corrosive action of their eucalypt chips and the high content of coloured water-soluble materials.^[80]

In the mid-1950s Masonite built a second hardboard plant, at Eildon, Victoria, using a new dry-forming process developed by the US Masonite Corporation to produce a hardboard smooth on both sides. Unfortunately inadequate proving tests appear to have been done, as the process could not be made to work satisfactorily on the eucalypt woods available, producing a board with very poor dimensional stability. This led to CSR taking over Masonite Corporation (Australia) Ltd. in 1959 and closing down the Eildon plant. CSR then went on to construct another hardboard plant in Victoria, at Bacchus Marsh, again using the Asplund defibration process on eucalypt wood. This began production in 1961. Further rationalization of the industry was achieved in 1967 when CSR and APPM decided to merge their hardboard and insulating board activities into Hardboards Australia Ltd. (HAL) and to close the former CSR Asplund hardboard mill in Sydney, but not the insulating board mill which, by that time, was using radiata pine almost exclusively.

Hardboard made from eucalypts has excellent strength properties, superior to those of similar products based on softwoods and for a time a significant part of the local production was exported. With the development of particleboard manufacture in Australia in the 1960s, however, the fibreboard industry experienced competition in many of its markets and its output began to decline. Further rationalization was achieved in 1978 with the closure of HAL'S Burnie plant. The industry has been active in meeting its competition through the development

of new products, especially by providing a range of processed surface finishes for decorative or functional use, and has also improved its resource utilization by increasing its use of sawmill residues.

Organisations in Australian Science at Work - [Australian Pulp and Paper Mills \(A.P.P.M.\)](#); [Colonial Sugar Refining Company \(C.S.R.\)](#); [CSIRO Division of Forest Products](#); [Hardboards Australia Ltd \(H.A.L.\)](#); [Masonite Corporation \(Australia\) Ltd](#)

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