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Ex parte meeting and handouts on the tire manufacturing process and the TIN date code changing process prepared by Bridgestone-Firestone

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US DOT Docket Management System
Docket NHTSA-00-8011 - 30

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On March 13,2002 the following NHTSA personnel visited the Bridgestone-Firestone (BSFS) tire manufacturing plant in Aiken, SC: Nancy Bell, Joe Scott and Roger Kurrus. They met with Michael Rose, General Manager; Masao Wada, Plant Manager; Steve Brooks, Vice President Quality Assurance; and Steven Akey, Vice President Government Affairs.

NHTSA's meeting and visit consisted of an overview of plant operations, Bridgestone Firestone's corporate structure and management practices at the plant, an explanation of the tire manufacturing process, and a plant tour. During the discussion and plant tour NHTSA was shown and described all of the key steps in the manufacturing processes, as well as quality control and safety measures that are in place. Of particular interest to NHTSA was the process of changing the TIN in the tire molds.

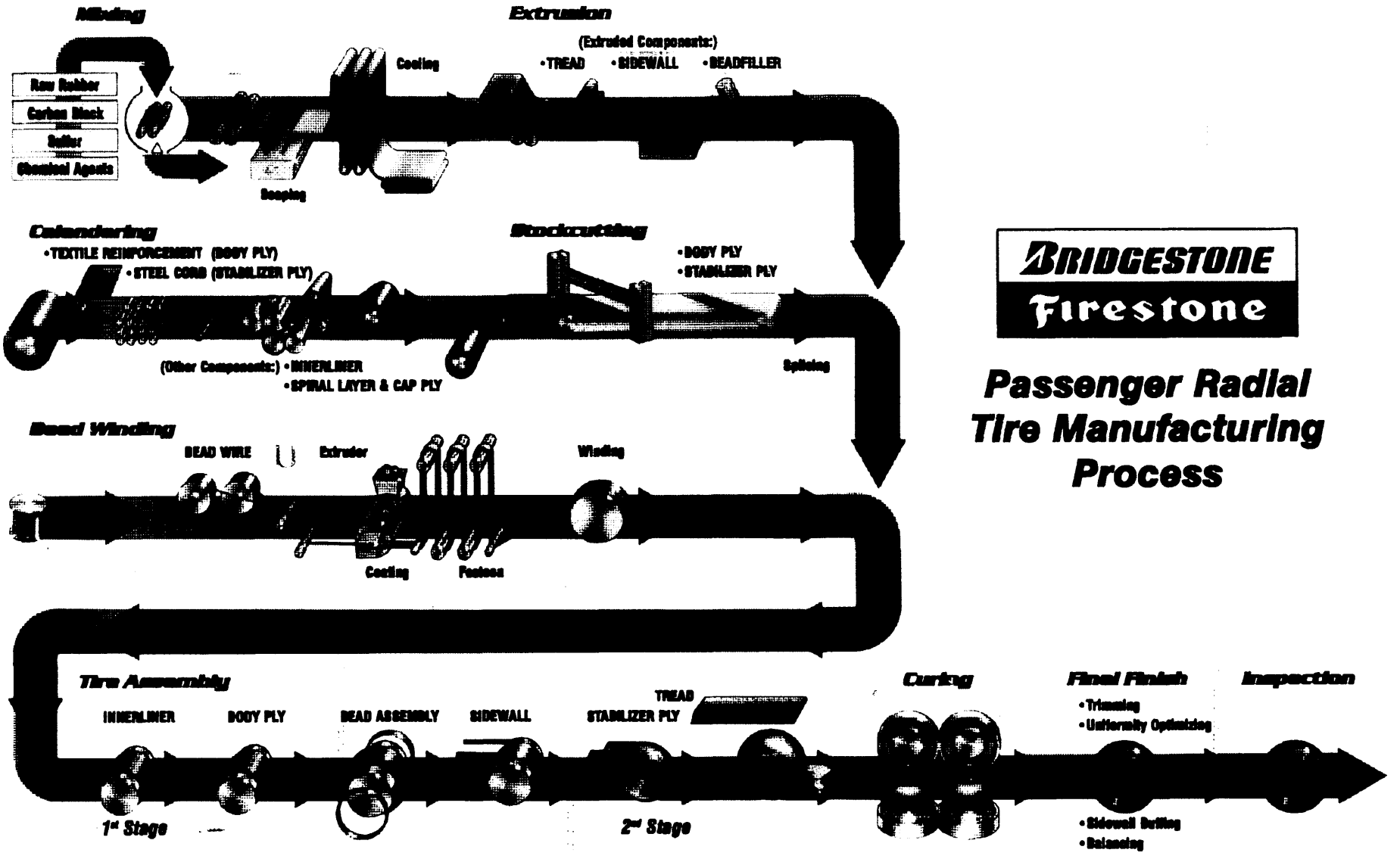
The changing of the TIN is done by removing a plug and/or plate from the tire mold with hand tools. The process is not automated, according to BSFS, due to the fragility of the mold. For the lower mold, they change the date code of the TIN in the tire press. BFSF provided NHTSA with a demonstration of this procedure.

According to BFSF, molds are removed about every 20 to 30 days for cleaning. Molds can weigh 5,000 pounds, so equipment is needed to remove and replace them. The molds heat to approximately 350 degrees F. Also, according to BFSF, molds are used for many years, up to 50, and are not often replaced.

According to General Manager Rose, changes to the upper molds must be done with the molds removed. He stated that the heat and inaccessibility of the upper mold would make it too dangerous, or simply impossible, to change upper mold TINs in the press. Further, according to Rose, South Carolina OSHA rules would not permit work on hot molds in the upper press. Therefore, as stated by BFSF, the upper molds would need to be removed weekly to change the and the estimated down time to do this is estimated by BFSF at 4 to 6 hours, for cooling, removal, TIN change, replacing in the press, and heating up the mold. At this plant, there are in excess of 100 presses. BFSF stated that, based on the number of presses, the replacement of upper mold TINs at this plant on a weekly basis is logistically impossible.

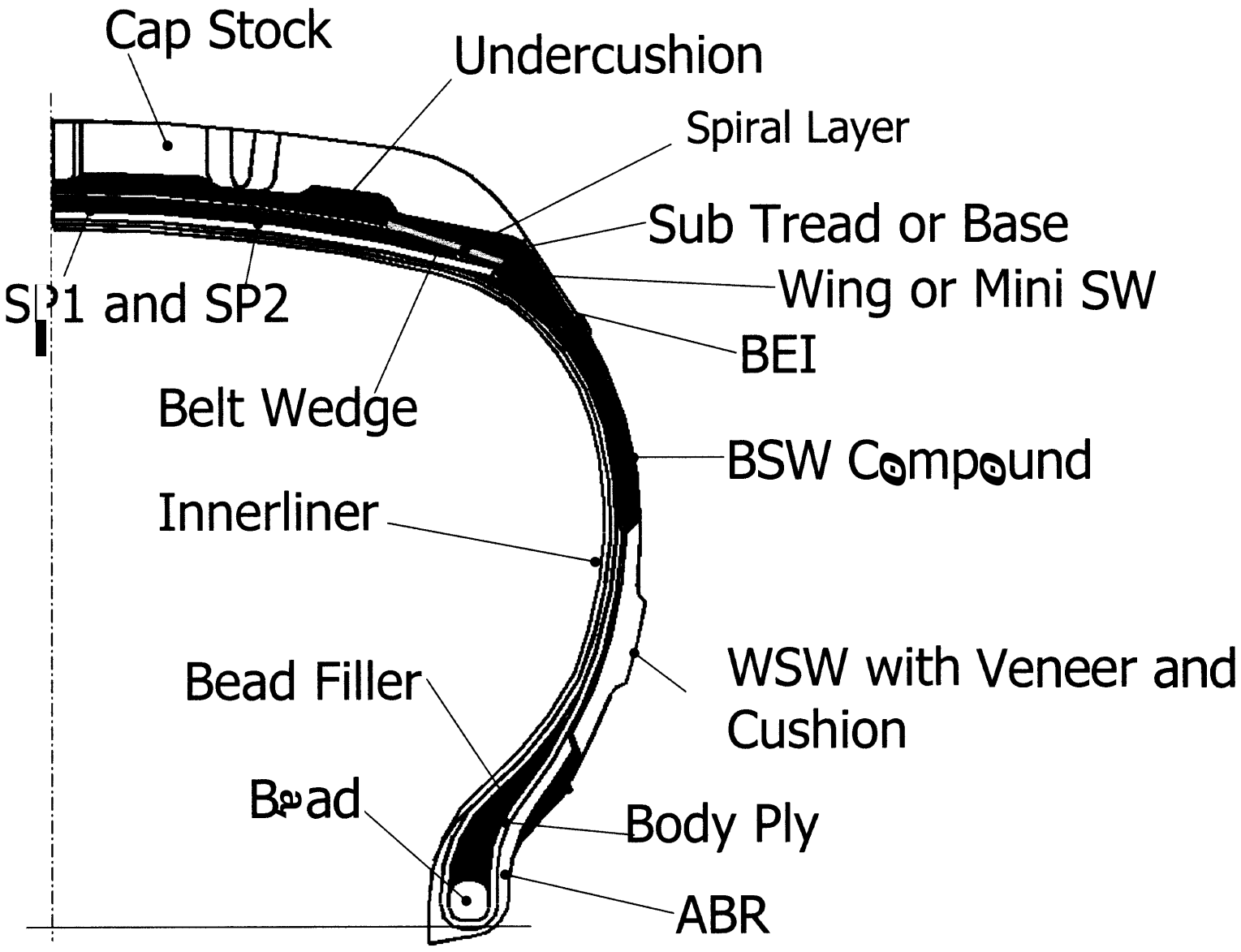
At this meeting, the BFSF provided NHTSA with several handouts outlining the tire manufacturing process, the composition of a tire, and a comparison by BFSF of the

current and proposed TIN date code changing process. These documents have been submitted to the above-mentioned docket.



BRIDGESTONE
Firestone

Passenger Radial Tire Manufacturing Process


Cap Stock
Undercushion
Spiral Layer
Sub Tread or Base
Wing or Mini SW
BEI
SP1 and SP2
Belt Wedge
BSW Compound
Innerliner
WSW with Veneer and Cushion
Bead Filler
Bead
Body Ply
ABR

Date Tin Changing Process - Comparison

Current

Date tins are made in advance and placed in marked location (1 per mold for a current total of **304)**

MT gets date tins on Saturday day shift and takes to press(es)

MT places press in manual and when it opens, activates E-stop and places APM tag on

MT places press in manual and when it opens, activates E-stop and places APM tag on. Loaders are then pinned out.

MT removes old date tin and places new one in.

Safety measures are reversed

Loaders are placed back in auto and if press is down for less than **15** minutes put into production (warmed up if not)

Form is initialed and the process continues across all presses with completion required before midnight on Saturday.

In general, the dateltin changeout process takes ***1 team member 10 hours to do all 152 presses*** **(304** molds) approximately **4** min. per press

Proposed

Date tins are made in advance and placed in marked location (2 per mold for a current total of **608)**

MT gets date tins on Saturday day shift and takes to press(es)

MT removes mold and takes to mold shop.

MT disassembles mold.

MT removes old date tin and places new one in.

MT removes old date tin and places new one in.

MT assembles mold.

MT takes mold back to press and **installs in press.**

MT warmups up press after both molds are installed.

MT cures first two tires and takes for "First Cure Inspection"

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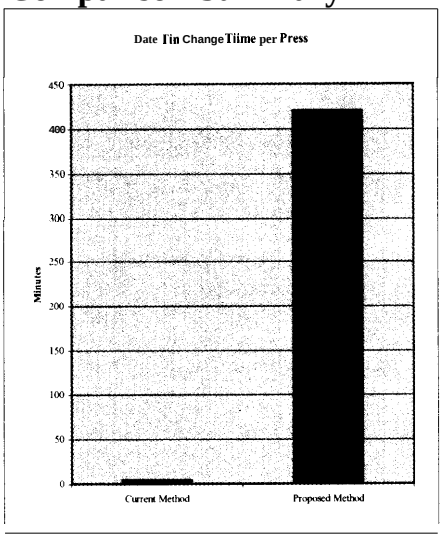
If tires are ok, then regular curing begins. If not, then appropriate countermeasures are taken.

Comparison Summary



'he date/ tin changeout process would take ***1 team member 6 - 8 hours o do 1 press.***

n general, the dateltin changeout process would take ***1 team member 912- '216hours to do all 152 presses (304 molds)***

'hat's a range of approximately ***38 to 50 days for 1 team member.***

)r it would take between ***38 and 51people to do it all in 24 hours.***

'he extra equipment, building space, material handling devices would be istronomical.

'his does not work for a weekly change item.