

JECO PALLETS

Jeco believes that its pallets are superior to wood for, in part, the reasons outlined below.

FIRE

Fire Test Results. In 1973, Factory Mutual Research Corporation, the predecessor to FM Global Technologies LLC (commonly referred to as "FM Approvals") was commissioned to test stacks of Jeco pallets designated by Jeco's customer as the customer company pallet Specification No. L-1891-2. (The tested pallets were produced with a linear low density polyethylene resin: the particular resin tested was designated as TR955 which is, for fire purposes and in Jeco's opinion, chemically equivalent to those it uses today.) The results of the three tests that such pallets underwent showed that the model of Jeco pallets tested was better than wooden pallets in a fire. The design, production methods and resin have, as it may impact on fire test results and in Jeco's opinion, remained constant since that date.

The specifics. The 1973 tests (summary attached) showed that **in a controlled burn :**

- a) **that the ceiling temperature, for example, exceeded 1700 degrees F for wood, but never exceeded 350 degrees F for Jeco pallets; and**
- b) **the burning rate (based upon the starting weight) was only twenty-five (25%) percent that of wood.**

The conclusion of such report was that:

- a) **for a like arrangement of wooden pallets, Jeco pallets would produce a more mild fire than that of wood;**
- b) **the sprinkler protected test resulted in only one sprinkler head containing (and nearly extinguishing) the fire compared to ten sprinkler heads in the case of wooden pallets; and**
- c) **proprietary tests by Factory Mutual of different (non-Jeco) plastic pallets in similar test configurations in the year of the Jeco tests resulted in fires more intense than that of wooden pallets.**

JECO BELIEVES that, while its pallets are not FM approved (in any of the eight fire categories that exist today), its pallets (with a relevant design similar to the pallets tested) are dramatically better (which Jeco believes is shown by the actual 1973 report including the graphs attached to such report) than wood in a fire. This is because Jeco believes that the 1973 test results would be matched or exceeded by corresponding Jeco pallets of today.

Current Fire Status

FM Approvals does not have a relationship with the Stuttgart Institute (referred to below) nor does it recognize the below mentioned DIN standard. Accordingly, FM Approvals has offered no comment on the specific test results or on the associated conclusions.

Europe

Jeco believes it is in compliance with DIN 16 776/T1. In 2002, Jeco submitted its pallets for analysis and certification by the Stuttgart Institute in Germany as requested by VW. The conclusion of the Stuttgart Institute as a result of such tests was that the Jeco pallets tested met the standards for classification K1 of DIN 53 438 (unique to certain automotive applications) which is, Jeco has been advised, the equivalent of the B2 criteria of standard 4102: this means, according to such standard as understood by Jeco, normal flammability (at least as good as wood under what Jeco believes are broader standards and consistent with the 1973 results). Jeco understands that Jeco pallets require no special sprinklers or racking configurations under such standard. Jeco has a copy of the certification issued by the Stuttgart Institute in Germany.

SUMMARY OF 1973 FIRE TEST EVALUATION OF PALLET MODEL L-1891-2

Three tests were conducted on Jeco pallets constituting Jeco customer pallet Specification No. L-1891-2 in 1973 in the West Glocester, R.I. Factory Mutual Research Center for possible use in a Jeco customer company plant.

The three tests were:

- a) a free burn test of one stack (8' high) of pallets on the floor of a 60' high test bay (unsprinklered);
- b) a test of a pallet array -- two stacks in width by three stacks in length, each 8' high on the floor of a 30' test bay (sprinklered); and
- c) a repeat of the free burn test (a) above.

Two graphs were attached to the test report.

The first graph showed the burning rate (based upon percentage of the initial fuel rate) measured against time (about twenty minutes) for each of the two free burn tests described above. Plotted on the same graph was a curve for wooden pallets using the same parameters. The maximum burning rate of .72% per minute of the original pallet weight was established for the Jeco pallets in each of the two free burn tests. This compared to a maximum of about 3.5% per minute of the original weight for the wooden pallets. This graph also showed a pile collapse at about 10 minutes for each of the two Jeco free burn tests (the collapse time for wood was not shown).

The second graph showed the ceiling temperature (degrees **Fahrenheit**) in the sprinklered test of Jeco pallets in the 30' high bay measured against time and compared to a like test of a 6' high (compared to Jeco's 8' high) pallet test of wooden pallets. In the Jeco test (.30 gpm), one sprinkler head opened after approximately 15 minutes when the ceiling temperature reached approximately 250 degrees F. (The wooden pallet test reached a ceiling temperature of 250 degrees F after only about 4 minutes [.22 gpm/(ft x ft)].) The maximum ceiling temperature in the Jeco test was approximately 380 degrees F (at about 17 minutes) versus a maximum ceiling temperature of about 1700 degrees F (at about 13 minutes) in the wooden pallet test.

The conclusions of such tests have already been noted in the preceding memo. However, Jeco would reiterate that the report concluded that any sprinkler system which is sufficient to protect rack, palletized and idle pallet storage with wooden pallets is sufficient to protect rack, palletized and idle pallet storage using the Jeco model of pallets tested.

Because FM Approvals claims that it may have proprietary rights to the actual report provided by Factory Mutual and has objected to Jeco providing copies of such report, Jeco has decided that providing this summary, in lieu of the actual report, is prudent: Jeco provides a summary which is helpful in providing accurate information to its customers without violating any possible rights which FM Approvals may have in the actual report.