

ADR Pallet Life and Performance Going on 15 Years

Applied Distribution Resources (ADR), a Silicon Valley based company founded in 1993, set out to develop, manufacture and provide the Ultimate pallet, a pallet that would exceed the performance of hardwood pallets and competitor's plastic pallets. Our pallet was unveiled in 1997. Design and engineering changes in 2000 resulted in our present pallet. We are now celebrating 15 years of these pallets being continuously used in circulation by the DoD with our first sale to the U.S. Navy in May of 2001.

Best Pallet For The Environment

The ADR Ultimate pallet is the only pallet, globally, made from 100% recycled post-consumer nylon carpet. **Honeywell** developed technologies to recycle and recover nylon from carpet and in 1996 saw the benefits in making ADR a strategic partner for the consumption of the finished Nylon resin. Thus, Honeywell assisted in ADR's development of the Ultimate pallet using recycled post-consumer Nylon carpet, over approximately 5 years. Now our pallet provides a 3,000 lb safe rackable load with a maximum rackable load of 6,000 lbs and comes with a 7-year guarantee.

Post-consumer carpet contributes over 4 billion pounds of solid waste to landfills every year. Nylon carpet represents 60-70% of all carpet that goes to landfills. This provides an excellent resource for ADR's pallets. It's sister company Carpet Recycling Resources, Inc. provides the material for our pallets. Lastly, Wood pallets are the largest consumer of our precious rainforests for hardwood pallets. Using ADR's pallets reduces solid waste that goes to landfills therefore, reducing Green House Gases from the carpet going to landfills, and reduces Deforestation. No other plastic pallet company uses 100% post-consumer recycled plastic for making pallets.

Lastly, ADR pallets do not contain any fire retardants in its composition. Nylon 6 and Nylon 6,6 are non-flammable materials. According to all suppliers, these resins do not have a flashpoint. Underwriters Laboratories has fire tests on record conducting small parts tests (UL 94) demonstrating these nylons to be non-flammable. The melting point for these resins is between 500-600°F. In addition, the EPA has been re-evaluating existing fire retardants currently available. Several years ago, some plastic pallet companies were using Deca-Bromide, a fire retardant, when EPA changed the safety rating of this fire retardant to the banned list. Several states quickly passed laws banning any products with Deca-Bromide not to be sold in their respective states. It cost these plastic pallet companies \$millions. One company was forced to file bankruptcy and lost their business. Nylon 6 and Nylon 6,6 are so safe, these resins are even used in manufacturing human heart valves and strong enough to manufacture under-the-hood car parts. There is an article by Allie Gross in the Mother Jones publication, dated April 3, 2015 and titled "**Will This Be the Nail in the Coffin of Toxic Flame Retardants?**" It suggests and questions the effectiveness of fire retardants. This article also points out the toxicity and carcinogens in these very same fire retardants.

Best In RFID Reading

ADR recognized the value for pallet level tracking with its long pallet life. In 2000, ADR was introduced to RFID Technology by Alien Technology, a leader in the designing of RFID

inlays, tags and readers for commercial use and custom designed RFID tags for the DoD. We assisted Mark McDonald, Alien's Director of Technology Development at that time, in the development of an application for pallets. We provided pallets for testing and participated in beta testing for this application. The ADR pallet provided the most robust and accurate readings of any pallet tested.

ADR realized the contribution RFID has had in improving supply chain management. In 2002, ADR published its first White Paper titled "**New Polymer Pallet Can Save Government and Industry \$Millions**". In this publication we discussed the importance of RFID in pallet level tracking, as well as the importance of our pallets in a closed loop system. In addition, we also discussed possible ways to close open loop systems with our pallet users to convince suppliers to participate reducing pallet costs even more. In 2004, ADR followed up with another White Paper titled "**The Platform for 'the Demand Chain' – RFID-Enabled Pallets**". Hence, ADR changed the pallet name from "The Ultimate Pallet" to The Smart Pallet". In addition, ADR was featured in an article written by Mary Catherine O'Conner for "The RFID Journal" in July 22, 2004. The title of the article is "Plastic Pallet gets BAP Tags." Since then RFID technology has improved and become more robust. Current tags make reverse logistics a better platform for ADR's pallets, increasing savings and reducing costs.

Best Pallet Performance at the Best Cost

Since 2001, ADR has sold thousands of pallets to various DoD agencies, including the Army, Navy, Air Force and National Guard. As an example, the Navy Dept purchased 287 pallets in September of 2003. They were contacted March 4, 2016 to confirm how many pallets were still being used. A warehouse employee under the management of Michelle Duenas at the Guam warehouse confirmed that all 287 pallets were still performing at the highest level without any chips cracks or breakage of any kind. Another 3,000 pallets were purchased by the Defense Distribution Center Procurement Office DDC-J1-A and were shipped to Hawaii for use. We are confident that most, if not all of our pallets are still being used. Unfortunately, base commander Lt. Commander Brian Boudreaux was unavailable for confirmation. Since 2001, ADR has received only one report of a broken pallet by the National Guard Unit 71st CST WMD in Des Moines, IA.

Conclusion

Currently, all of the daily solitations we receive shows that wood pallet purchases are approximately \$9.00 each. Most wood pallets have a pallet life of 4 ½ weeks according to the Grocery Industry (GMA) study of 1992 with multiple repairs. ADR offers a 5 year leasing program available to the U.S. Gov't. The cost for our pallet per month would be approximately \$3.09. Using RFID for tracking and reverse logistics to close the existing open loop, the Federal Government could save more then 33% of their current spending budget for pallets, including reverse logistics cost.

Example A:

XYZ agency purchases 1000 wood pallets every 2 weeks on a one-way trip at a cost of \$9.00 per pallet. This totals \$18,000.00 for that month. On an annual basis this would total \$216,000.00. To satisfy XYZ's pallet needs using ADR's pallets and reverse logistics to get those pallets back, XYZ would probably need 3,000 pallets. 1,000 pallets at the point of origin, 1,000 pallets in transit (coming back to point of origin), and 1,000 pallets at the final destination. The total monthly cost would be \$3.09 times 3,000 pallets times 12 months which equals

\$111,240.00. Without return shipping costs the savings is \$104,760.00 annually. Now multiply this times the 7 year guarantee for our pallets and the savings grows to \$733,320 over the guaranteed life of ADR pallets.

Example B:

Taking advantage of a vendor's participation, could save both parties in the pallet costs, reducing costs even more.

ABC vendor ships 1,000 pallets of goods to one of the 2 distribution centers in the US for DoD use. If the goods are on an ADR pallet why not ask for the goods to be discounted by the cost of the wood pallets that the vendor purchased to ship their goods on? Then add the cost of the vendor's time of possession for the pallet, say 10 days. They would absorb 10 days of the cost for ADR's pallets so they add \$1.00 per pallet load shipped and billed to XYZ agency. Now the agency pays \$2.09 per month for the pallet and ABC pays \$1.00. Here in this scenario the savings become greater for both parties.