

AIRSLED®

POWERFUL | PORTABLE | POSSIBLE

Appliance Movers: Product Safety & Performance White Paper



Airsled, Inc.

November 2020

INTRODUCTION

In September 2020, Airsled partnered with the Marcone Servicers Association (MSA) on a survey to establish and quantify specific pain points related to risk exposures MSA members face when servicing major, residential appliances. The largest risk exposures include:

- Claims related to property damage when moving an appliance during servicing
- Financial loss and reputational risk attributed to having to decline, cancel or reschedule a service appointment because the appliance required additional manpower to move
- Productivity loss attributed to incurring injury from moving and lifting heavy appliances

The survey results were then used to support an Airsled webinar series and follow-up training and education activities for MSA members to help demonstrate the safety attributes of Airsled's Appliance Movers in the context of reducing risk exposure and liability.

AIRSLED: AN IMPECCABLE SAFETY RECORD

Airsled was formed in 1982 and was the first to develop, commercialize, and introduce portable, light-weight load movement solutions initially for moving appliances and quickly thereafter for moving vending machines. Since then, the company's portfolio of standard and especially custom solutions has significantly grown.

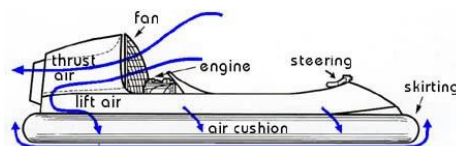
Number of Airsled systems sold globally since 1982	> 30,000
Number of claims related to property damage attributed to Airsled systems	0
Number of claims related to injury attributed to Airsled systems	0

Airsled's products can be found in a wide array of industries solving countless load movement challenges utilizing its low-pressure, air film technology. Airsled uses the highest quality, domestically sourced materials to ensure superior build-quality. Airsled also pioneered the overall product design to ensure ease-of-use and overall simplicity. These core principles have resulted in an impeccable safety record for Airsled products since their first introduction in 1982 as presented in the table.

LOW-PRESSURE, AIR FILM TECHNOLOGY DEMYSTIFIED

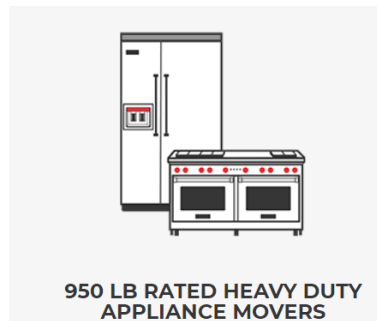
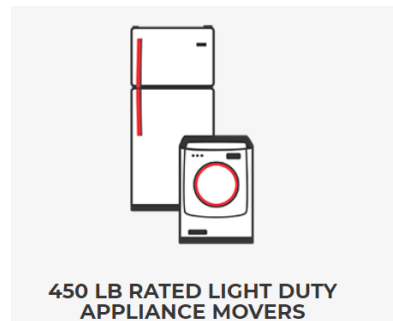
The easiest way to explain low-pressure, air film technology is to consider a hovercraft. In a hovercraft, a fan or blower forces air into a rubber skirt that inflates. The skirt also allows air to escape while still maintaining a consistent degree of inflation forming a cushion of air that elevates and supports the heavy passenger structure above.

As air escapes from the bottom of the skirt, it forms a thin layer between the bottom of the skirt and the surface the hovercraft is traveling over. This thin layer of air significantly drops the coefficient of friction (μ) between the surfaces thereby reducing the amount of force needed to move the object which in this case is the hovercraft. In a hovercraft, thrust and direction are delivered by a fan and rudder. For an Airsled system, thrust and direction (or mobility) is delivered by the pushing, pulling and rotating action of the individual. Each Airsled system is ultimately a hovercraft that lifts any object resting on its air beams letting the individual move that object with ease.



AIRSLED APPLIANCE MOVERS: SMALL SYSTEMS, BIG MUSCLES

As of this White Paper's publication, Airedled offers three categories of Appliance Movers based on their lift rating capability. They are: Light Duty, Standard and Heavy Duty Appliance Movers.



When Airedled systems are used properly and under optimal conditions, the coefficient of friction between the Airedled's air beams and flooring surface is reduced to nearly ZERO. So, what does this mean in real world terms and why is this important?

Airedled's testing and analysis concluded that under optimal conditions, a force equal to 1% of a load's weight is required to initiate and maintain movement once that load is elevated by the lifting action of the inflated air beams when using an Airedled system.



In the picture to the left, the 48" wide range weighs approximately 670 lbs. Applying the 1% rule, a force of 6.7 lbs. will be required to move this range once it is lifted with an Airedled system. But how much force can an average person generate?

[OSHA recommends](#) that a person should not exert more than 225 Newtons of force when pushing an object using only their full body strength from a free-standing start. 225 Newtons translates to 50 lbs. of

force. Applying the 1% rule and OSHA's guidance, a person could theoretically move a 5,000 lb. load safely with an Airedled system (1% of 5,000 lbs. = 50 lbs. which is OSHA's recommended limit).

Put another way, when an Airedled Appliance Mover is used properly to move an appliance under the correct conditions (e.g. flat, smooth, non-porous flooring, properly rated system for the load's weight, even weight distribution), an individual will not only require minimal force to move the appliance, but that force will be well under OSHA's safety recommendation for force exertion, which is 50 lbs.

LOW COEFFICIENT OF FRICTION, HIGH DEGREE OF PROTECTION

In addition to the immense load movement-enabling capabilities of low-pressure, air film technology on which Airedled systems are based, there is a secondary and equally important benefit related to surface protection. When the coefficient of friction is nearly ZERO between two surfaces, the likelihood of surface damage where the travel takes place is nearly eliminated when an Airedled system is used correctly.



The picture to the left shows an inflated air beam traveling over newly installed hard wood flooring. It is the actual smooth rubber material sliding over the wood floor. Not visible to the naked eye is the micro thin layer of air creating the nearly ZERO coefficient of friction between the wood floor and rubber material. This surface protecting, gliding action makes Airsled Appliance Movers especially valued for their ability to move heavy appliances over sensitive

flooring surfaces that are prone to damage. Note: This picture also shows how Airsled's spacer kit for appliances on legs bridges the gap to the appliance's base to generate adequate lift since the air beam should be as close to the load's base as possible.

PAIN POINTS FOR MSA APPLIANCE SERVICERS AND HOW AIRSLED CAN HELP

As stated in the introduction, Airsled conducted a survey with the Marcone Servicers Association (MSA) to better understand and quantify servicers' pain points. The below data is based on responses collected from 510 participants.

Survey Question	MSA Response
How many times per month do you need to pull major appliances out of their installed space to properly service them?	Over 62% have at least 11 pulls per month
Have you ever accidentally damaged a floor while moving an appliance while performing maintenance, repair and/or installation services?	82% said YES
What was your flooring repair cost?	35% said at least \$500
Have your insurance rates ever increased due to claims related to flooring damage you caused during a service call?	12% said YES 21% said "Not sure but I remember the claims process being a headache"
How many times in the past 12 months did you need to decline, cancel, or reschedule a job because a second person was needed to safely move an appliance so that it could be serviced?	35% said at least 4 times
Have you ever injured your back or other muscle when lifting and/or moving an appliance on the job?	66% answered YES.
How long did it take to recover to full strength to resume your normal work activities?	48% said at least 5 days

The survey results highlight the frequent risk and liability exposures appliance servicers face. Each response can be directly tied to the potential for financial loss, reputational risk, or both.

The Airsled-MSA survey results take on even more meaning when one considers very common installations such as below. While Airsled offers a range of options for their Appliance Mover systems, dial-controlled **Variable Speed** performance adds even a greater degree of safety performance because it lets the end-user control the rate and height of air beam inflation which is critical when moving appliances in tight cavities when overhead clearance is less than 1 inch.



Premium flooring + luxury appliance + expensive stone countertops and backsplash



Large capacity, residential stacked washer/dryer + tight closet installation



Limited overhead clearance + delicate wood floor + limited room due to island



Space saving appliance + incredibly cramped space



Dial close-up view of Airsled Variable Speed model without vacuum cleaner capability



Dial close-up view of Airsled Variable Speed model with vacuum cleaner capability



Dial close-up view of Airsled Variable Speed Light-Duty model

CONCLUSIONS

The purpose of the Airsled-MSA survey was to establish and quantify MSA members' pain points and directly correlate them to the risk mitigation capabilities of Airsled Appliance Movers. The following four conclusions can be drawn when considering the safety and performance features of Airsled Appliance Movers in relation to the potential risks appliance service professionals face when servicing major, residential appliances. Airsled Appliance Movers:

- Greatly reduce or eliminate the risk of causing property or equipment damage especially on flooring
- Help you avoid and prevent injury when needing to move heavy appliances
- Help you avoid declining, rescheduling, or cancelling service calls that require extra manpower
- Yield a rapid return on investment (or payback) relative to the Airsled Appliance Mover purchase price when one considers the financial loss potential from any number of outcomes presented in the survey

About Airsled, Inc.

Founded in 1982, Airsled is the original inventor of portable, light-weight appliance and load movement systems based on low-pressure, air film technology. All products are proudly made in the USA at its Newark, DE facility using materials and components sourced from US-based suppliers. Airsled makes a wide range of standard and custom products and sells products globally. In the US, customers can buy Airsled products through the company's website www.airsled.com and on Amazon. Learn more at www.airsled.com where you can also browse the many [videos](#) and see Airsled systems in action. Any inquiries or requests can be sent to airsled@airsled.com

About Marcone MSA

Marcone Servicers Association is dedicated to improving the trade by providing the most comprehensive education courses and materials for building successful service companies. Beyond tools and trainings, MSA has a rich community of industry professionals, leaders, and experts where people can learn from one another.

Since 1998, MSA has been the leading trade organization for independent servicers and appliance repair businesses. MSA offers diverse benefits from hands-on training, to an annual convention, to professional and personal programs that help strengthen organizations and individuals. MSA proudly supports over 2,500 member service companies and trains more than 5,000 technicians every year.

MSA is backed by the nation's largest appliance parts distributor, Marcone Supply, and is strategically partnered with major manufacturers to bring members the most current and valuable opportunities and resources. For more information, please contact MSA@marcone.com