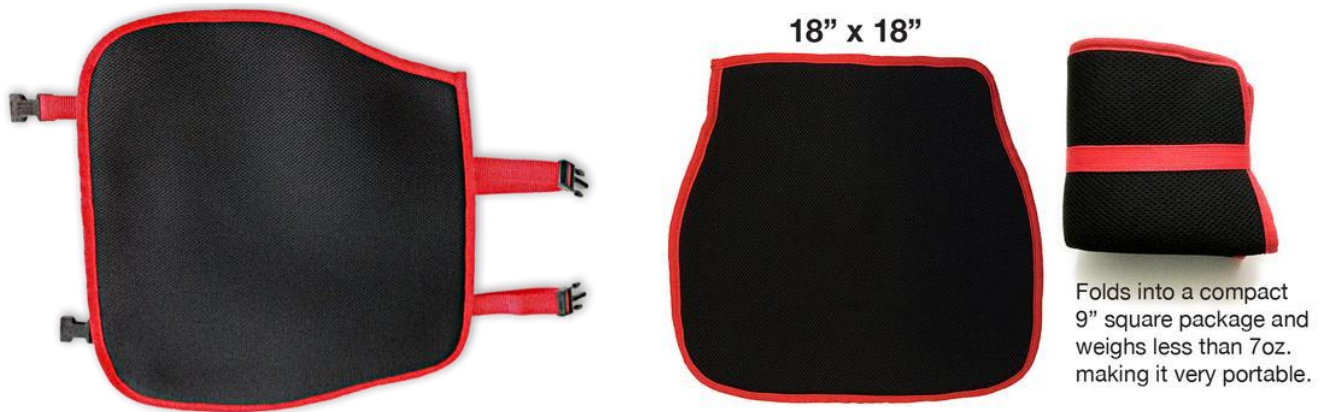


Advanced Comfort Cushions

Add comfort to your ride

Our seat cushion significantly increases comfort through weight re-distribution on the seat surface improving blood flow to the lower extremities. The immediate effect from the use of our Comfort Cushion is a noticeable reduction of the pain and discomfort caused by the lack of oxygen to the lower body muscles. This is common outcome on a wide range of seating utilizing moulded foam cushions covered by a tight form fitted upholstery.



Designed for use on truck, heavy equipment and car seating.

Comfort Cushions are designed for all trucks such as Peterbilt, Kenworth down to smaller city delivery trucks and parcel vans right up to 400 Ton Caterpillar and Komatsu haul trucks. They are ideal for long distance trucker and mining equipment operators where shifts can go well beyond the normal eight-hour shift.

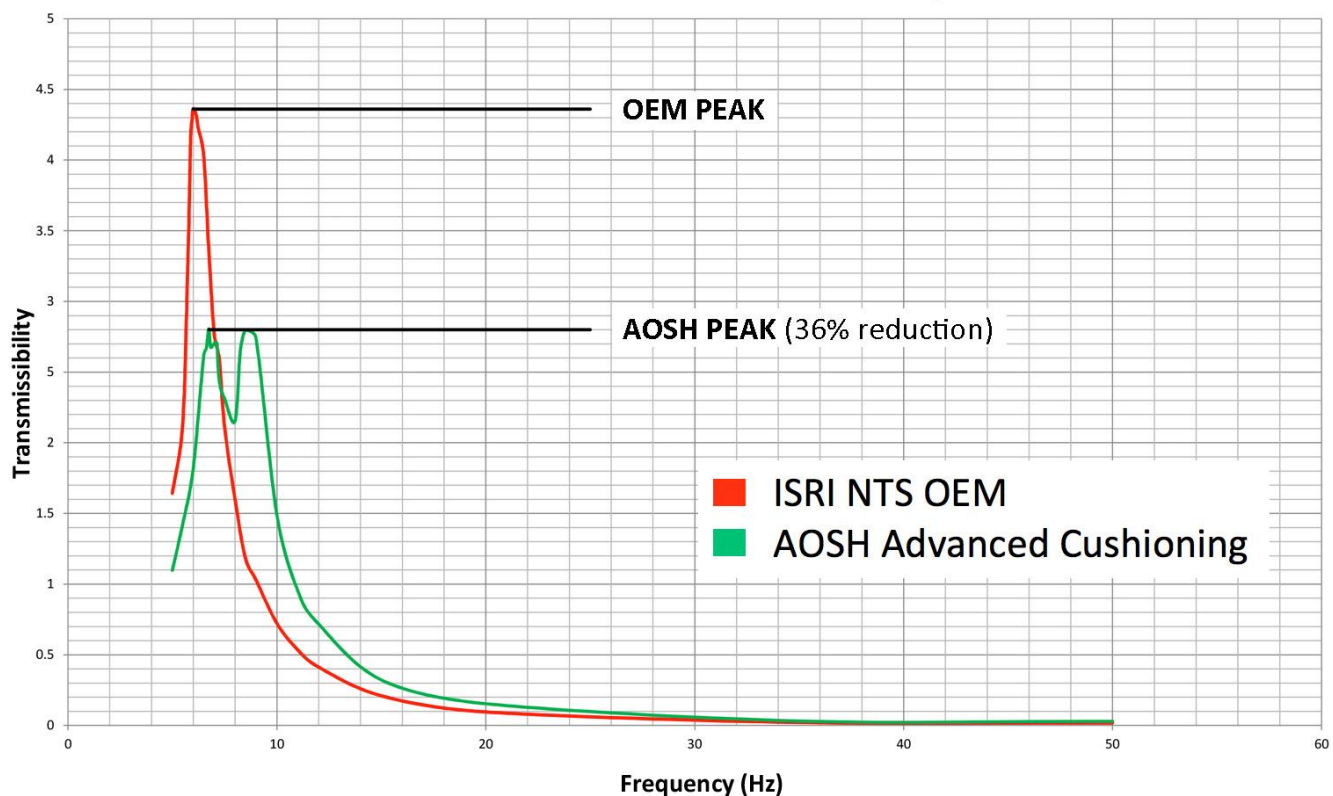
DISCLAIMER:

Our 3-D "engineered" cushions are designed to improve "seating comfort" issues on seats with moulded foam cushions only. Use of these products on hard surface seats such as plastic and wood surface chairs or other hard surface seats will not provide any additional benefits. There is no benefit to be expected for any user of these products who is experiencing pain or discomfort that is a result of any physical impairment.

The Science Behind the Seating

Using science, we strive to develop advanced cushioning products for heavy equipment and trucks that significantly increases the occupational health and safety outcomes for truck drivers and heavy equipment operators.

SUM Vibration Transmissibility WBV



WEIGHT REDISTRIBUTION:

Our goal is to improve operator “health and safety outcomes” starting with improving seating comfort and then move on to reducing vibration and shock loads. To achieve these goals, we have conducted over 500 individual tests to identify the cushioning materials and designs to achieve these goals.

As a result of this extensive testing program we have achieved a significant improvement in seating comfort through weight redistribution. We cannot eliminate the weight of a body on a cushion we can however re-distribute that weight more equally over the entire seated area. When a person sits on a standard moulded foam seat cushion the downward force of the weight results in “pushback” force on the body. This “pushback” pressure can be high enough that it will restrict blood flow to the affected areas of the body. This restriction can starve the muscles and tissues in those areas of essential oxygen. The result is discomfort and possible pain.

Through our extensive body mapping testing we have identified a new fabric that redistributes the operator weight over a wider area. This body mapping is a valuable tool in helping us better understand the pressure exerted on the Ischial Tuberosity bones commonly known as sit bones. This is the area where the blood flow can be reduced or blocked. The result has been a significant reduction of these high-pressure points.

This fabric is commonly known as 3D Spacer fabric as it is composed of a top and bottom layer interconnected by a centre layer of fibres. The unique feature of this product is that its construction can be engineered to achieve specific outcomes. Not all



Spacer fabrics are equal, and it is the engineering input that sets a few apart from the common general use spacer fabric products.

With the advanced AOSH cushion a person should be able to maintain an adequate flow of blood to the affected area reducing or eliminating the possibility of any discomfort or pain. These results are based on a double layer of engineered spacer fabric used as either an add-on personal use cushion or a redesigned upholstery set. However, we have also been surprised to learn that we have produced improvements with just 1 layer of fabric. While these improvements are less than our double layers, they still offer a worthwhile benefit, making our standard upholstery sets an industry first.

We are making progress in identifying suitable materials that when incorporated into the seat cushion should reduce the shock and low frequency vibrations transmitted through the seat cushioning further increasing the operator comfort. As we are in the final stages of completing our "comfort testing" we will address the shock and low frequency issues and begin the work on designing our prototype cushioning.

FABRIC BREATHABILITY:

Our seating fabrics are produced by a leading mill in the USA that has a proven record of producing fabrics with a high resistance to wear while still providing a high level of seating comfort. Air can easily pass through the fabric. This eliminates hot spots increasing the operator's comfort and helping to control moisture.

"ODOR SHIELD" ANTIMICROBIAL FABRIC TREATMENT (available Sept. 2020):

There have been many complaints over the years regarding odours being present in the cabs of heavy equipment, most are attributed this to a previous operator and their "lack of hygiene". The real cause is the presence of bacterial activity usually within the seat fabric that has been the result of spilled liquids or dropped food by previous operators. In our advanced seat fabrics, we will be treating them with a recognized antimicrobial treatment from a global industry leader. This treatment will provide at least a 3 year period of effectiveness in destroying bacteria. The antimicrobial treatment is permanently attached to the fabric fibres and is not affected by abrasion or laundering and is approved by the EPA and FDA in the USA. An added benefit of this treatment is that it provides an improved level of water repellency making the fabric easier to keep clean.

LOW FREQUENCY VIBRATIONS (available early 2021):

It has been clearly proven that the cumulative effect of these low frequency vibrations between 0.5 HZ and 100HZ present a health issue for heavy equipment operators. We have conducted over 300 individual tests including low frequency vibrations plus the data collected from road tests on a wide range of cushioning materials. These range from standard OEM products through to several styles of new advanced materials. The results have shown us that through the use of some of these advanced products we can achieve a reduction of over 35% in the transmissions of these harmful vibrations through the seat to the operator. When viewed over longer periods of time this level of reduction is significant and should be seen as improving operator health and safety outcomes.

SHOCK LOADS (available early 2021):

Studies have shown that certain specific mining operations can generate shock values that travel through the equipment to the seat and subsequently to the operator. One in particular is "High Impact Shovel Loading Operations" or "HISLO" which occurs during the loading of large mine trucks. While this study currently focuses on the large above ground mining equipment, we feel the same situation also applies in underground mining operations while smaller trucks are being loaded. Through a series of shock tests, we have found that by improved controlling of certain features found in some suspension seats we can achieve reductions of the transmission of intermittent shock loads by over 45%. When viewed over a shift or normal workweek these cumulative results become very significant. The modifications do not alter the original structures within the seat nor do they compromise the safety standards that govern these seats.

HISLO *Shock Tests* "High Impact Shovel Loading Operation"

