

ENDURO Rubber Mulch



Australia's #1 Certified Rubber Mulch Supplier

PLAYGROUNDS



Enduro Rubber Mulch
is Certified & Meets
Australian Standards



PLAYGROUNDS



PLAYGROUNDS ARE A SOURCE OF HAPPINESS FOR OUR CHILDREN HOWEVER, THEY CAN ALSO BE A SOURCE OF INJURY.

ASPHALT OR CONCRETE ARE UNSUITABLE FOR USE UNDER PLAYGROUND EQUIPMENT, UNLESS THEY ARE USED AS A BASE **FOR** A SHOCK ABSORBING MATERIAL SUCH AS RUBBER MULCH.

RUBBER MULCH PROVIDES THE MOST SHOCK ABSORPTION THUS PROVIDING PLAYGROUNDS WITH TWICE THE CUSHIONING EFFECT OVER, SAND, GRAVEL OR WOOD CHIP PRODUCTS .

THE ULTIMATE SAFETY NET FOR OUR CHILDS SAFETY IN THE PLAYGROUND. INJURIES FROMS TRIPS AND FALLS, ESPECIALLY FALLS FROM PLAY EQUIPMENT, ARE SIGNIFICANTLY MINIMISED.

PLAYGROUNDS



IN PROPERLY MAINTAINED PLAYGROUND APPLICATIONS, RUBBER MULCH WILL REDUCE THE OCCURANCE OF FALL INJURIES. NOTE THAT RUBBER MULCH CAN ONLY HELP REDUCE INJURIES FROM A FALL NOT PREVENT THEM.

THERE ARE VARIOUS TYPES OF RUBBER MATERIAL USED IN PLAY AREAS IN TODAYS MARKET; LOOSE FILL, SOFT FALL, WETPOUR, MATTING AND PAVERS.

LOOSE FILL CONSISTS OF SHREDS OF RUBBER FROM 1 TO 3 CM IN LENGTH AND DOES NOT CONTAIN ASBESTOS NOR FIBERGLASS AS REINFORCEMENT FIBERS.

RUBBER MULCH AUSTRALIA RECOMMENDS THE USE OF PLAYGOUND FLOORING THAT “GIVES”, SUCH AS COMPARISON BETWEEN RECYCLED TYRES AND OTHER LOOSE FILL PLAY AREA MATERIALS AT A DEPTH OF 20CM.

IT WAS REPORTED THAT RECYCLED RUBBER HAD ROUGHLY TWICE THE CUSHIONING EFFECT OF OTHER MATERIAL.

PLAYGROUNDS

MEASURING THE SHOCK ABSORPTION OF A FALL



PLAYGROUNDS



CRITICAL HEIGHTS FOR A 15CM UNCOMPRESSED LAYER

WOOD MULCH 1.550m

FINE SAND 1.550m

MEDIUM GRAVEL 2.100m

RUBBER SHREDS 4.200m

THE HIGHER THE HEIGHT, THE SAFER THE MATERIAL

PLAYGROUNDS

PLAYGROUND INSTALLATION SPECIFICATIONS FOR RUBBER MULCH

THE FALL ZONE VALUE FOR EARLY CHILDHOOD SETTINGS (WHERE THE CHILD IS SUPERVISED I.E. CHILDCARE CENTRES) IS 1.9M FROM THE PERIMETRE OF ANY NON MOVING COMPONENT AND 1.9M FROM THE FURTHEREST EXTENSION OF ANY MOVING COMPONENT. THE FALL ZONE VALUE FOR OTHER SETTINGS, I.E. SCHOOLS, PARKS OR ANY PUBLICLY ACCESSIBLE SETTINGS IS 2.5M FOR ANY NON MOVING COMPONENT AND 2.5M FROM THE FURTHEREST EXTENSION FOR ANY MOVING COMPONENT.

USE THESE DIMENSIONS AS A GUIDE AND ONLY WHEN THE VALUE OF ANY EQUIPMENT IS NOT KNOWN.

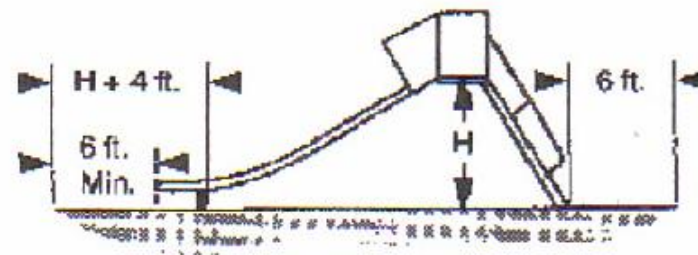
RECOMMENDATIONS FOR FALL ZONE STATIONARY EQUIPMENT

THE FALL ZONE SHOULD EXTEND A MINIMUM OF 2.5m IN ALL DIRECTIONS FROM THE PERIMETER OF THE EQUIPMENT.

SLIDES

THE FALL ZONE FOR SLIDES SHOULD EXTEND A MINIMUM OF 1.9M FROM THE PERIMETER OF EQUIPMENT IN EARLY CHILDHOOD SETTINGS AND 2.5M FOR ALL OTHER SETTINGS.

PLAYGROUNDS



Shaded Area Denotes Fall Zone with Protective Surfacing



Figure 16 Fall Zone for Slides

ENDURO RUBBER MULCH PLAYGROUNDS

SINGLE AXIS SWINGS

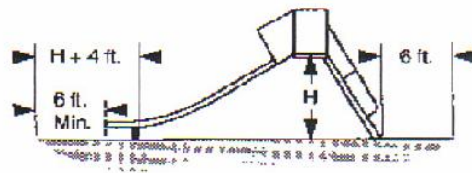
BECAUSE CHILDREN MAY DELIBERATELY ATTEMPT TO EXIT FROM A SINGLE AXIS SWING WHILE IT IS IN MOTION, THE FALL ZONE IN FRONT OF AND BEHIND THE SWING SHOULD BE GREATER THAN TO THE SIDES OF SUCH A SWING.

IT IS RECOMMENDED THAT THE FALL ZONE MEASURED FROM THE FURTHEREST EXTENSION OF THE SWING IN THE DIRECTION OF MOVEMENT BE 1.9M FOR EARLY CHILDHOOD SETTINGS AND 2.5M FOR ALL OTHER SETTINGS. THE NON MOVING COMPONENT (FRAME) HAS A FALL ZONE MEASURED FROM THE PERIMETRE, 1.9M FOR EARLY CHILDHOOD SETTINGS AND 2.5M FOR ALL OTHER SETTINGS.

MULTI AXIS SWINGS

THE FALL ZONE SHOULD BE MEASURED FROM THE FURTHEREST EXTENSION IN ALL DIRECTIONS OF THE MOVING COMPONENT. A MINIMUM OF 1.9M FOR EARLY CHILDHOOD SETTINGS AND 2.5M FOR ALL OTHER SETTINGS.

PLAYGROUNDS



Shaded Area Denotes Fall Zone with Protective Surfacing

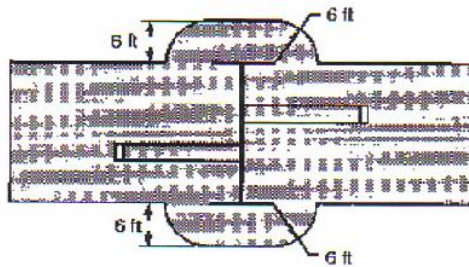
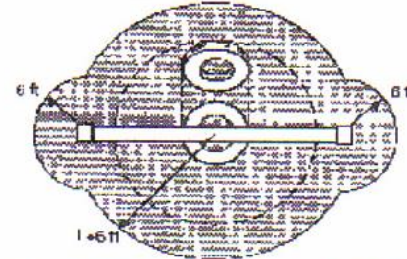


Figure 17 Fall Zone for Single Axis Swings

SPRING ROCKING EQUIPMENT

THE FALL ZONE SHOULD EXTEND A MINIMUM OF 1.9m FROM THE "AREST" PERIMETER OF THE EQUIPMENT .

ADJACENT SPRING ROCKERS WITH A MAXIMUM SEAT HEIGHT OF 600mm MAY SHARE THE SAME FALL ZONE.



Shaded Area Denotes Fall Zone with Protective

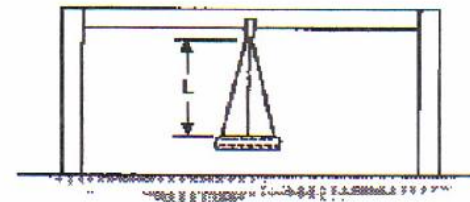


Figure 18 Fall Zone for Multi Axis Tire Swings

PLAYGROUNDS

COMPOSITE EQUIPMENT

THE ABOVE RECOMMENDATION FOR INDIVIDUAL PIECES OF EQUIPMENT SHOULD BE USED ONLY AS A GUIDE IN ESTABLISHING THE FALL ZONES AROUND PIECES OF COMPOSITE PLAYGROUND EQUIPMENT

PRODUCT	INSTALL DEPTH	CRITICAL FALL HEIGHT
RUBBER MULCH	200mm (Public use) 100mm (Private use)	2.4M

WITH PROPER INSTALLATION AND MAINTENANCE, RUBBER MULCH WILL REDUCE FALL INJURIES IN PLAYGROUNDS. HOWEVER, NOTE THAT RUBBER MULCH CAN ONLY HELP REDUCE INJURIES FROM A FALL, NOT PREVENT THEM.

THE SURFACE IN THE IMPACT AREA (FALL ZONE) SHALL MEET THE REQUIREMENTS FOR IMPACT ATTENUATION SO THAT THE CRITICAL HEIGHT OF THE SURFACING, ACCORDING TO AS/NZS 4422, SHALL BE EQUAL TO OR GREATER THAN THE FREE HEIGHT OF FALL OF THE EQUIPMENT.

PLAYGROUNDS

MAINTENANCE

LOOSE FILL IS EXTREMELY SUSCEPTIBLE TO SCUFFING AND DISPLACEMENT WHICH MAY RESULT IN THE MATERIAL BECOMING TOO SHALLOW TO PROVIDE THE REQUIRED IMPACT ATTENUATION.

THEREFORE, LOOSE FILL SHOULD BE REGULARLY INSPECTED, AND FURTHER FILL ADDED AS NECESSARY, IN ORDER TO ENSURE THE CORRECT DEPTH IS MAINTAINED.

IN AREAS WHERE DIPLACEMENT IS PARTICULARLY LIKELY (UNDER SWINGS, OR IN AREAS OF HEAVY TRAFFIC) EXTRA MATERIAL SHOULD BE PROVIDED.

NOTE : THE PROVISION OF EXTRA MATERIAL DOES NOT REMOVE THE NEED FOR REGULAR INSPECTIONS AND MAINTENANCE.



Has the shock-absorption been tested?

Yes. From the testing performed by RUBBER MULCH AUSTRALIA, the loose rubber mulch complies with the requirements of AS4422-1996 and EN1177:2008 at the time of testing in respect to 'G' and HIC values obtained at the fall heights tested.

The material tested would be suitable for soft fall that required a maximum fall height of 2.4m.

Is there any steel content in Rubber Mulch?

Rubber Mulch 3cm shreds are smaller than most others. The smaller the shred, the less likely they are to contain embedded steel wire.

To ensure that all wire is removed, Rubber Mulch shreds pass through a magnetic process. This extra attention and precaution removes steel remnants up to 99%.

Will Rubber Mulch crumble, disintegrate, or decompose?

No. Rubber Mulch shreds are made from 100% recycled tyre rubber. All tyres are made of vulcanized rubber. the vulcanizing process makes the rubber literally indestructible.



Is Rubber Mulch ever dusty or slippery?

No. In addition to promoting almost instantaneous drainage, Rubber Mulch retains small amounts of moisture, which is just enough to prevent the accumulation of dust and slipperiness.

How does Rubber Mulch compare with wood chips?

Wood chips absorb moisture from the soil and is dehydrated by the heat, where as rubber mulch is non porous and does not absorb water on its way through to the soil.

Does Rubber Mulch blow or wash away?

No. Rubber Mulch shreds are too heavy to be significantly affected by normal high winds or heavy rains.

Does Rubber Mulch fade?

No. Carbon black is a pigment which is an element in rubber tyres and is non fading. Coloured mulch can fade after 7-10 years.

How should the play area be prepared?

We recommend the area be prepared ahead of time by clearing the ground of rocks, stumps and other debris, then calculate an area that surrounds the play equipment of 1.9 m to 2.5m (commonly referred to as the "use" or "fall zone").

Is Rubber Mulch Toxic?

No. A carrier solvent more efficient than water would be needed to extract toxic chemicals from tyre shreds in quantity, and a suitable non polar vehicle would be required to penetrate protective skin layers for significant absorption. This was deemed implausible in a playground situation.







TEST RESULTS



We have undertaken comprehensive testing in Australian laboratories for Australian conditions and have obtained Scientific opinion to confirm evidence of the environmental safety of this product including soil, air and environmental impact.

WHAT IF IT IS SWALLOWED

A SERIES OF TESTS SHOWED A 2CM PIECE OF MULCH WAS ADDED TO HYDROCHLORIC ACID (stomach acid) AND APPEARED TO INDICATE ONLY FIBROUS REINFORCING STRANDS WERE DISSOLVED. THE RUBBER DID NOT APPEAR TO BE AFFECTED IN ANY WAY.

WHAT DOES THIS MEAN? IF A PIECE OF RUBBER IS SWALLOWED, IT SHOULD NOT CAUSE ANY ACUTE OR CHRONIC PROBLEMS.

AS PER ANYTHING FOREIGN SWALLOWED SHORT TERM ISSUES, SUCH AS AN UPSET STOMACH WILL BE A FUNCTION OF THE AMOUNT OF RUBBER SWALLOWED.

AS TO THE FATE OF THE RUBBER SWALLOWED, THEY ARE EVENTUALLY EVACUATED FROM THE BODY, JUST LIKE ANY OTHER NON DIGESTIVE MATERIAL.

TEST RESULTS

TOXICITY

RUBBER MULCH IS CONSIDERED NON TOXIC. BASED ON TOXICITY CHARACTERISTIC LEACHING PROCEDURE CONDUCTED ON RECYCLED TYRE SHREDS, THE FOLLOWING TRACE METAL ELEMENTS WERE DETERMINED TO BE SIGNIFICANTLY LOWER THAN REGULATORY THRESHOLD LIMITS: ARSENIC , CADMIUM, CHROMIUM, LEAD, SELENIUM, AND SILVER.

SOURCE: CRITERIA OF SELECTING TOXICITY CHARACTERISTIC LEACHING PROCEDURE AND SYNTHETIC PRECIPITATION LEACHING PROCEDURE TESTS TO CHARACTERISE SPECIAL WASTES.

ORAL INGESTION IS DEEMED TO BE LOW IN OVER ALL HAZARD BECAUSE INGESTION OF TYRE SHREDS ON THE GROUND IS NOT LIKELY, AND THE GASTROINTESTINAL TRACT IS UNLIKELY TO BE EFFICIENT IN EXTRACTING TOXIC CHEMICALS FROM THE TYRE SHRED.

TYRE SHRED DO NOT CONTAIN CHEMICALS WITH HIGH VAPOUR PRESSURES , THUS, EXPOSURE VIA INHALATION IS DEEMED INCONSEQUENTIAL AND RESULTING HAZARD NEGLIGIBLE.

DERMAL EXPOSURE IS DEEMED TO BE UNLIKELY AND THEREFORE TO PRESENT LOW OVERALL HAZARD.

TEST RESULTS

FLAMMABILITY

RUBBER SHREDS WERE TESTED IN 2008 TO DETERMINE WHETHER THIS MATERIAL WOULD BE CONSIDERED FLAMMABLE (a material is considered flammable if it ignites and burns with a self sustained flame at a rate greater than 2mm per second along its major axis). FROM THESE RESULTS, IT WAS CONCLUDED THAT RECYCLED RUBBER MATERIAL IS CONSIDERED NON FLAMMABLE.

LEACHING

A NUMBER OF STUDIES HAVE BEEN DONE TO DETERMINE THE POTENTIAL FOR LEACHING FROM RECYCLED TYRE SHREDS. INCREASED LEVELS OF ZINC AND IRON WERE FOUND IN SOIL TILLED WITH RAW RUBBER SHRED PARTICLES (5ml and less) WHEN TESTED ANNUALLY FOR 4 YEARS. THE AMOUNTS DETECTED WERE BELOW LEVELS OF CONCERN AND POSED NO HAZARDS TO WATER QUALITY. NO TOXICITY TO TURF GRASS OR ATHLETIC FIELDS WERE DETECTED. ZINC THAT HAD LEACHED FROM TYRE SHREDS WAS DETERMINED NOT TO POSE ANY POTENTIAL HARM TO THE ENVIRONMENT.

CONFIRMED TEST RESULTS

We stand by our product undertaking continuous R&D, testing and certification by the leading Australian authorities.

- Scientific
- SMART APPROVED WATERMARK
- AND other reports are available upon request

Contact admin@rubbermulchaustralia.com.au

MARKETING & PROMOTIONS

- APRIL 09 – GARDEN WEEK - PERRY LAKES
- JUNE 09 – MASTER BUILDERS - CONVENTION CENTRE
- AUGUST – MELBOURNE LANDSCAPE - MELB SHOWGROUNDS

- SEPTEMBER 2009 - CONSOIOUS LIVING EXPO - CLAREMONT
- OCTOBER 2009 – PERTH LOVES EARTH - PERTH
- OCTOBER 2009 - DUNNS GREEN FESTIVAL - WANNEROO
- OCTOBER 2009 – SUSTAINABILITY EXPO - FLOREAT
- OCTOBER 2009 – BUNBURY EXPO - BUNBURY
- OCTOBER 2009 – AUSTRALIA OPEN GARDEN SCHEME - KARNUP
- NOVEMBER 2009 - SPRING IN THE GROVE DAY - NEERABUP
PRIMARY
SCHOOL

Regular State Local magazines and newspapers

AVAILABILITY

ENDURO RUBBER MULCH IS AVAILABLE DIRECT AND EXCLUSIVELY FROM RUBBER MULCH AUSTRALIA Pty Ltd OR ITS DISTRIBUTORS.

ENDURO PLAYGROUND MULCH IS PACKAGED IN 25 K BAGS TO 500K ON REQUEST.

PALLATIZED BAGS FOR BULK ORDERS WILL BE 500KL WEIGHT OF 1 PER PALLET (M3).

IT IS RECOMMENDED LARGE OR BULK ORDERS (SAY OVER 5 TON) BE PLACED 4/6 WEEKS BEFORE DELIVERY IS NEEDED.

ENDURO Rubber Mulch



Australia's #1 Certified Rubber Mulch Supplier

PRICING

- WE ALWAYS OFFER *BEST PRODUCT* AT THE *BEST PRICE*
- PRICING CAN BE SUBJECT TO THE QUANTITY ORDERED
- OUR PRICE MATRIX CAN BE TAILORED TO YOUR REQUIREMENT AND EMAILED TO YOU ON REQUEST

Contact us at admin@rubbermulchaustralia.com.au or call direct 0408 938 617