

RPS248: Using shredded waste carpet in equestrian surfacing - October 2023

Situation

Following a review of the available evidence on chemicals in carpets, the Environment Agency (EA) has decided to withdraw [RPS248 on the use of shredded waste carpet in equestrian surfacing](#).

This follows increased knowledge of the risk of hazardous chemicals in waste carpet. Microplastics also remain an environmental risk and a concern.

On withdrawal of the RPS, the use of shredded waste carpet in equestrian surfacing will not be allowed under any regulatory positions or exemptions from environmental permitting in England.

Background

Low-Risk Waste Position (LRWP) 43 (published in 2012) previously allowed waste carpet to be used in equestrian surfacing. In June 2021 the LRWP was replaced by RPS 248, because the environmental risks no longer supported this activity being low risk. This was due to uncertainty on chemicals risk, microplastic releases and non-conforming material contamination.

RPS 248 included conditions and limitations to help manage the risks whilst further work was carried out by industry and environmental regulators to assess the environmental risks of using waste carpet in equestrian surfacing.

Subsequent evidence provided from a study produced by Natural Resources Wales (NRW) and sampling data from Carpet Recycling UK (CRUK) working group members has informed the decision to proceed with withdrawing RPS 248.

Assessment

Chemical contamination

NRWs study identified that 13% of carpets (20% in underlay) contain sufficient hazardous substances to display at least 1 hazardous property.

Analysis by CRUK working group members found several PFAS chemicals, including the Persistent Organic Pollutants (POPs) PFOA and PFOS, in the majority of the composite samples of shredded carpet.

PFOA and its salts are highly stable and persistent in the environment and can bioaccumulate in mammals. It exhibits adverse effects for both terrestrial and aquatic species. Major health issues such as kidney cancer, testicular cancer, thyroid disease, pregnancy-induced hypertension, and high cholesterol have been linked to PFOA.

PFOS and its salts are extremely persistent with substantial bioaccumulating properties and binds to proteins in the blood and liver. It affects liver, kidney, thyroid, fecundity, leading to cancer formation.

PFBS was also found, which is a substance where similar concerns are developing.

Ongoing activity under RPS248 may contaminate land and groundwater and create a potentially significant end of life liability for those who install these types of equestrian surfaces.

POPs Waste

Persistent Organic Pollutants (POPs) are a group of organic compounds that have toxic properties, persist in the environment, accumulate in food chains and pose a risk to human health and the environment.

The concentrations of POPs found in carpet samples taken mean that waste carpet is **not** currently POPs waste.

However, the POPs waste concentration limits define the level at which material is so dangerously contaminated that high temperature incineration is legally required to destroy it. Lower levels must still be managed in an environmentally sound manner.

The levels of PFOS found in waste carpet are well below the current POPs waste limit of 50,000µg/kg. However, as the samples taken by CRUK members are composites taken from shredded mixed carpet, a degree of dilution will have occurred. Taking that into account, it remains unlikely that any individual carpet would exceed the current POPs waste limit.

There is no PFOA waste limit in the UK yet. Defra has already [consulted on](#) a limit of 1000 ug/kg, which is expected to be in place as soon as 2024. The EU has already adopted this limit, and it has been proposed for international adoption. One composite sample exceeded this limit, several others were close to it. This means that a small proportion of individual waste carpets will inevitably exceed this limit.

In future, the regulatory discussions will be about whether the level of contamination is so high as to require hazardous waste incineration of waste carpet. Our initial thinking is that the proportion that exceeds the limit is probably too small for us to take that approach. However, we must then ensure that carpet containing these chemicals is managed in an environmentally sound manner, and can no longer consider it low enough risk to be used in equestrian surfacing.

The concentrations of PFOA in waste carpet are in close proximity to the proposed limit. Any future limit change below the expected 1000µg/kg value would require a reconsideration of waste carpet as POPs waste.

End of Waste

The legal product limit for PFOA is 25 µg/kg. Composite samples of waste carpet tested on behalf of the CRUK working group found an average level of 213µg/kg. 62% of samples were positive and the highest result was 1100 µg/kg.

Similarly, for PFOS, the limits for textile or other coated material is 1µg per square metre of coated material. Any virgin carpet used to make horse menage material would have to meet this limit. Composite samples of waste carpet tested on behalf of the CRUK working group found an average level of 529µg/kg for PFOS. 79% of samples were positive and the highest result was 2200 µg/kg.

Waste carpet cannot legally achieve end of waste and be manufactured, marketed, supplied or used as a product for any use if it exceeds product limits. It would be an offence to market a product containing this amount of PFOA for most uses, including for equestrian surfaces.

Microplastics

Microplastics, including fibres, are ubiquitous in the environment. There is ongoing research into their physical impacts, such as the risk of damage to the lungs when inhaled or cellular damage if they pass into the bloodstream. They are also suspected to transport chemicals to water, soils and potentially humans and wildlife when ingested.

Domestic plastic-based fabrics contain many chemical additives, for example plasticisers, dyes and flame retardants which can cause environmental harm and human health impacts. Microfibres that shed from these fabrics are small and lightweight, meaning that they can travel long distances by air and water and carry these chemicals with them alongside any physical impacts.

Plastic's persistent qualities mean that it takes hundreds to thousands of years to fully degrade, so any additional microplastics entering the environment will continue to increase the total concentration. As their impacts are not yet fully understood, we do not yet know the concentration at which they begin to cause harm, but the more microplastics present in the environment the more likely it is that we are approaching harmful thresholds.

The Environment Agency is concerned about the potential for microplastics to cause harm and we are developing our regulatory position on this issue in collaboration with research organisations, industry and across government. We are also working with Defra on microplastics in national and international policy and the future of microplastics in products.

Waste Hierarchy

The use of shredded waste carpet in equestrian surfacing is considered 'downcycling'. Other recycling or reuse options may not comply with future POPs requirements unless the POP containing material is separated for destruction. Due to the level of PFOA contamination, it may not be possible to recycle the materials into new products and meet existing product limits.

Water Quality

PFAS contamination of water is a growing concern. Waste containing PFAS chemicals needs to be managed in a way that safeguards surface water and ground water.

There is the potential the use of shredded waste carpet in equestrian surfacing could constitute a [groundwater activity](#). The use of waste carpet in equestrian surfacing could require permitting both as a waste and a groundwater activity under the Environmental Permitting Regulations.

Existing equestrian surfaces

The management of existing waste carpet derived equestrian surfaces is an important issue.

We previously advised existing surfaces do not need to be removed, but these surfaces will need to be managed appropriately at end of life. Shredded waste carpet is often mixed with materials such as sand, plastic granules, etc, making future waste management more difficult.

There remains a risk that the legal controls that apply to the management of chemicals in equestrian surfacing when it reaches end of life could be more stringent in the future.

Once the RPS is withdrawn, it cannot be used to install additional waste on existing surfaces.

Industry implications

Our current interest is in post-consumer waste carpet arisings. We understand some companies operate businesses based on accepting these types of waste carpet streams. The withdrawal of

RPS 248 will mean there will be no options to use shredded waste carpet in equestrian surfacing under a regulatory position or exemption from environmental permitting.

We are aware that carpet fibres produced from the **manufacture of new carpets** is also used in equestrian surfacing. The chemical risk from this material will be lower as a result of regulatory controls on chemicals used in the manufacture of new carpets, for example REACH and POPs Regulations.

Questions and Answers

Q1. I accept, treat and sell shredded waste carpet for use as an equestrian surface. What does withdrawal of RPS 248 mean for me?

Q1A. Following withdrawal of RPS248, you will no longer be able to supply waste carpet in equestrian surfacing, either as a surface in its own right or mixed with other materials such as sand.

Q2. When will RPS 248 be withdrawn?

Q2A. We will be proceeding to promptly withdraw RPS 248. This is likely to be before 1 January 2024. Continued use of contaminated materials has implications for both the environment and the future liabilities of end users.

If use continues, you should be aware that under Duty of Care you are required to provide the subsequent holder of the waste with relevant information on the nature of the waste. This would include the presence of chemicals of concern that may affect subsequent disposal of that surface. Provision of information on PFAS and other hazardous chemicals may discourage customers from using this material.

We will amend the RPS to include the withdrawal date in due course and inform Carpet Recycling UK and others when this has happened. You can also set up email alerts for changes to the RPS 248 GOV.UK page.

Q3. Why are PFOA and other chemicals finding their way into waste carpet?

Q3A. Carpet in the waste carpet stream has likely been treated with stain resistant chemicals during manufacture, supply or use of the carpet, prior to restrictions on the chemicals use coming into force.

Q4. I sell shredded waste carpet for use as an equestrian surface. How do I obtain a permit to allow me to use shredded waste carpet in equestrian surfacing?

Q4A. We may consider permit applications for the use of waste carpet from facilities that have effective measures to identify and exclude carpets containing chemicals of concern and control release of microplastics. For example, the use of carpet manufacturing waste of known benign chemical composition and composed only of natural fibres might be considered.

However, given the small quantities of waste carpet used in individual equestrian surfacing applications (for example menages and existing surface top ups), an environmental permit may not provide a realistic option.

Q5. I have an equestrian surface made of shredded waste carpet. What do I need to do next?

Q5A. At the present time we are not advising that existing waste carpet derived equestrian surfaces need to be removed from use. You should not add additional waste carpet derived material to the existing surface.

When an existing surface is removed this should be assessed, described and classified in accordance with the waste and chemicals legislation in force at that time. Different concentration limits for POPs and other hazardous chemicals may apply in future.

Q6. The chemicals used in the treatment of waste carpet were banned years ago. Much of the carpet I am receiving for recycling was manufactured after the chemical bans. Why can't I use this carpet in equestrian surfacing?

Q6A. The data provided by CRUK shows that these chemicals are currently present in waste carpet. This is due to the long and variable life span of carpets. This means that, even if use of the chemicals ceased years ago, carpets containing chemicals will continue to be discarded for some time.

Q7. You are stopping me using waste carpet in equestrian surfacing. What are the alternative options for managing this waste?

Q7A. We welcome new innovative and existing waste treatment options from industry that provide appropriate management of waste carpet and minimise the risk of pollution, for the best overall environmental outcome.

The majority of waste carpet is currently sent to Energy from Waste and landfill. These options can continue to be utilised. If this changes, we will let industry know.

Any recycling of waste carpet into new products would need to ensure that product limits for chemicals, like PFOA, are met. This is likely to mean ensuring that contaminated carpets are excluded.

Q8. I accept waste carpet from local authorities for treatment and use as an equestrian surface. What does the withdrawal of RPS 248 mean to me?

Q8A. After withdrawal of the RPS, waste carpet managed through local authority waste management routes will need to be sent to suitably authorised facilities which will ultimately not send the waste carpet for use as an equestrian surface. The concentrations of POPs found in carpet samples taken mean that waste carpet is not currently designated as POPs waste.

Q9. I send shredded waste carpet for equestrian surfacing to Wales and Scotland. What do I need to do in those countries?

Q9A. You will need to speak to [Natural Resources Wales](#) or the [Scottish Environmental Protection Agency](#) for further advice on the regulatory requirements in those countries.

Q10. I have an end of waste status for my surfacing/am self-assessing my surfacing as end of waste?

Q10A. Waste carpet cannot legally achieve end of waste and be manufactured, marketed, supplied or used as a product for any use if it exceeds product limits. End of Waste status is subject to change upon new information and regulatory changes. PFOA and PFOS levels in shredded waste carpet provided by CRUK were often in excess of these product limits.

Q11. If there is no room at Energy from Waste facilities and waste must be sent to landfill, is that not just shifting the problem somewhere else?

Q11A. We are not currently advising that this waste must be managed as POPs waste and require hazardous waste incineration. If it were POPs waste, hazardous waste incineration may be needed for the type of POPs present.

However the level of POPs is close enough to the waste concentration limit, and well above product limits, for us to be unable to accept that it can be used for activities like equestrian surfaces that rely on it being benign.

Sending waste carpet to Energy from Waste, landfill and recycling facilities with controlled activities for emissions and monitoring will help minimise the risk to water quality and land posed by using waste carpet in equestrian surfacing.

Q12. Is all waste carpet now needing to be incinerated in the same way as domestic seating?

Q12A. No, we are not currently advising that this waste be managed as POPs waste and incinerated. It contains far less POPs than domestic seating.

However, as it does contain lower levels of POPs, we do need to ensure it is managed in an environmentally sound manner.

Q13. What if we can prove the waste carpet does not contain chemicals of concern?

Q13A. We are not aware of any reliable methodology that would allow the identification and separation of post consumer waste carpet in this way. For other waste carpet, there may be additional controls to exclude contaminated carpet that could form part of the environmental management system of an environmental permit.

Q14. What is a Regulatory Position Statement?

Q14A. Regulatory Position Statements (RPS) set out the circumstances where we will not normally take enforcement action against a specific legal requirement when specific conditions are met. An example would be where the law requires an environmental permit, but we do not take enforcement action for not having a permit where, for example, further evidence needed to be obtained on environmental risks.

Our RPS are published on GOV.UK. RPS are regularly reviewed and are often amended or withdrawn as circumstances, knowledge, or legislation change.

Q15. I have further questions on shredded waste carpet in equestrian surfacing. Who can I speak to?

Q15A. If you wish to contact the Environment Agency, please send your questions to wasteregexecsupport@environment-agency.gov.uk with 'RPS248' in the subject title. You can expect a response in accordance with our [Environment Agency customer service commitment](#)