What glove can I use against waste water or contaminated soil?

Waste water corresponds to contaminated water produced due to domestic, industrial or agricultural activities. It can be present as regular sewage (which usually contains human waste, soap and detergents) or can be produced due to industrial activities. In the latter case, wastewater will usually contain many different chemicals.

Contaminated soil is typically caused by improper disposal of waste, by industrial or agricultural activities. It is usually contaminated by various chemicals, such as solvents, aliphatic hydrocarbons (petroleum products), pesticides, lead, etc.

The type of protective gloves to recommend against waste water and contaminated soil will depend on the type of contamination to avoid:

Chemical contamination

If possible, a list of all potential chemicals present in the wastewater or contaminated soil should be provided so that the most accurate recommendation can be given.

However, the precise nature of the chemicals and their precise proportion in the wastewater/contaminated soil are often not known or only roughly estimated. By default, it is then recommended that the user protects himself by using a Barrier® glove as an underglove with a nitrile glove such as a Solvex® or an AlphaTec® as an overglove. The Barrier® glove is able to stand against a very large variety of chemicals whereas the Solvex® or AlphaTec® will increase the dexterity level and mechanical protection. However, note that this recommendation is a general one and that the gloves mentioned above might not be able to protect the user against some very specific chemicals (e.g. methylene chloride, radioactive chemicals, etc.) that could be present in the wastewater or the contaminated soil. This is the reason why a list of chemical compounds present in the wastewater/contaminated soil should preferably be provided.

Presence of pathogens such as bacteria, fungi or viruses

In case of sewage, wastewater (and sometimes contaminated soil) often corresponds to a potential source of pathogens due to the presence of human waste in it.

If pathogens can be present in the wastewater/contaminated soil, a glove with an AQL equal or inferior to 1.5 should be used. Such gloves are indeed assumed to represent an effective barrier against bacteria and fungi according the EN374 standard.

The gloves should also have successfully passed an additional viral penetration test to represent a protection against potential viruses present in the wastewater/contaminated soil. Two standards widely accepted by industry as effective means of assessing the efficacy of PPE with pathogens that are transmitted via bodily fluids are ASTM F1671 and ISO 16604 standards, commonly referred to as the viral penetration tests. These methods are used to assess the resistance of certain personal protective equipment materials to penetration by viruses in the case of contact with bodily fluids. The methods use Phi X 174 bacteriophage, which is an accepted surrogate for viruses such as hepatitis B, C and HIV. A product that has passed this test has been shown to be an effective impermeable barrier to these viral strains.

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Some of the Ansell gloves with an AQL equal or inferior to 1.5 and having passed the viral penetration test (either ISO 16604 or ASTM F1671) are listed hereunder:

Disposable gloves:

- TouchNTuff® DermaShield® 73-701 and DermaShield® 73-711
- TouchNTuff® 92-600 and 92-605
- TouchNTuff® 92-670 and 92-665
- Microflex® 93-833, 93-843, 93-852, 93-853, 93-856
- Microflex® 63-864
- Supreno® EC, Supreno® SE, XCEED®, MidKnight®, Blaze®, NeoPro®, NeoPro®
- EC, Diamond Grip™, Diamond Grip Plus™, Safegrip®

Non-disposable gloves:

- Solvex® 37-900, 37-185, 37-675, 37-645
- AlphaTec® 58-530
- Bi-Colour™ 87-900
- Extra™ 87-950

Recommendations made in this note are based on extrapolations from laboratory test results and information regarding the composition of chemicals and may not adequately represent specific conditions of end use. Synergistic effects of mixing chemicals have not been accounted for. For these reasons, and because Ansell has no detailed knowledge of or control over the conditions of end use, any recommendation must be advisory only and Ansell fully disclaims any liability including warranties related to any statement contained herein.