

Australian/New Zealand Standard™

**Textile floor coverings—Cleaning
maintenance of residential and
commercial carpeting**



AS/NZS 3733:2018

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TX-009, Carpets. It was approved on behalf of the Council of Standards Australia on 14 November 2018 and by the New Zealand Standards Approval Board on 6 November 2018.

This Standard was published on 12 December 2018.

The following are represented on Committee TX-009:

Australian Chamber of Commerce and Industry
Australian Industry Group
AWTA Product Testing (Testing Interests Australia)
Carpet Institute of Australia
Floorcovering Association of NSW
Floorcovering Association of Victoria
Floors New Zealand
New Zealand Wool Testing Authority
Specialised Restoration & Cleaning Professionals (SRCP) – A Division of ISSA

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com or Standards New Zealand web site at www.standards.govt.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 3733:2017.

Australian/New Zealand Standard™

Textile floor coverings—Cleaning maintenance of residential and commercial carpeting

Originated as AS/NZS 3733:1995.
Second edition 2018.

COPYRIGHT

© Standards Australia Limited

© The Crown in right of New Zealand, administered by the New Zealand Standards Executive

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

ISBN 978 1 76072 296 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TX-009, Carpets, to supersede AS/NZS 3733:1995, *Textile floor coverings—Cleaning maintenance of residential and commercial carpeting*.

NOTE: The term ‘textile floor covering’ is applicable to carpeting in roll, sheet and modular (tile and plank) form.

This Standard has been extensively revised and updated, in summary, as follows:

- (a) With recognition of the advancements in detergent technology and that all cleaning maintenance methods, when carried out by competent textile floor covering cleaning technicians using the methods in this Standard, can have a positive effect on a textile floor covering. While aimed at maximizing the wear life of textile floor coverings, maintenance of textile floor coverings as a contributing factor to indoor air quality and the health of building occupants has been emphasized.
- (b) The need for safe work practices, hygiene control and methods to help prevent cross contamination in vulnerable person’s facilities has been emphasized.
- (c) Recommendations for the disposal of extracted cleaning wastes have been included and the need for efficient use of natural water resources emphasized.

There are five basic systems of textile floor covering cleaning recognized in this Standard based on the mechanical action involved in the cleaning process.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
FOREWORD.....	4
 SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE.....	5
1.2 OBJECTIVE	5
1.3 NORMATIVE REFERENCES	5
1.4 DEFINITIONS.....	5
 SECTION 2 GUIDELINES ON TEXTILE FLOOR COVERING MAINTENANCE	
2.1 PLANNING A MAINTENANCE PROGRAM.....	6
2.2 FREQUENT VACUUMING	6
2.3 INTERIM MAINTENANCE CLEANING METHODS.....	6
2.4 CORRECTIVE CLEANING METHODS	7
 SECTION 3 CLEANING CHEMICALS	
3.1 SCOPE OF SECTION	11
3.2 SOIL SUSPENSION.....	11
3.3 GENERAL COMPOSITION AND REQUIREMENTS	11
3.4 SPECIFIED REQUIREMENTS FOR CLEANING CHEMICALS.....	12
3.5 SPOT AND STAIN REMOVAL	14
3.6 ENZYME-CONTAINING SPOT AND STAIN REMOVERS.....	14
3.7 RISK MANAGEMENT PROCEDURES.....	14
3.8 INSPECTION AND PRE-TESTING	15
3.9 DISPOSAL OF EXTRACTED CLEANING WASTE	17
 APPENDICES	
A CLEANING APPARATUS	18
B CLEANING METHODS	26
C HOUSEHOLD CHEMICALS WHICH MAY DAMAGE TEXTILE FLOOR COVERINGS	42
D SPOT AND STAIN REMOVAL—HOUSEHOLD USE	44
E SPOT AND STAIN REMOVAL—PROFESSIONAL USE.....	47
F FIBRE, TEXTURE AND COLOUR.....	53
G TESTS TO AID FIBRE IDENTIFICATION	54
H OTHER FACTORS RELATED TO MAINTENANCE	55
 BIBLIOGRAPHY	 57

FOREWORD

The purpose of textile floor covering maintenance is twofold: to retain the original texture and appearance of textile floor covering for as long as possible, and to ensure that it is hygienic and contributes positively to the indoor environment. This is achieved by keeping the total soiling content, including visible stains, to an absolute minimum by cleaning. When conducted regularly and effectively, this will both prolong the life of a textile floor covering and minimize possible health problems that may be caused by the accumulation of soils and microflora within the pile of the textile floor covering.

It is not traffic alone that wears out textile floor coverings, but also soil on and in the textile floor covering, caused by people entering a building, carrying soil, mud, grit and other contaminants on their footwear, in conjunction with airborne contaminants that can also originate from within the building and cause soiling. These contaminants are deposited on the textile floor covering eventually working their way down into the pile.

A textile floor covering tends to trap this soiling. This helps to maintain better indoor air quality by holding the soiling at floor level instead of allowing it to circulate throughout the building.

To maintain a healthy indoor environment, prolong the life of the textile floor covering and protect the investment, soiling should be kept to an absolute minimum. The principal way that can be done effectively is by regular and systematic cleaning with soil removal equipment.

While regular vacuuming will help reduce the soiling load within the indoor environment, the gradual build-up of oily and other sticky soiling will reduce the effectiveness of the vacuuming. This oily and/or sticky soiling can be removed by the use of specialist cleaning agents using a variety of methods and equipment. The type of equipment and maintenance program should be chosen with regard to the area to be cleaned, number of obstructions present, traffic load on the surface, style of textile floor covering, textile floor covering fibre type, availability of utilities and the cleaning frequencies required, degree and nature of soiling, colour of textile floor covering and required appearance. Consideration should also be given to the selection and use of methods, chemicals and equipment that have a minimal effect on the environment. Whichever method is chosen, it should be carried out with skill, in accordance with this Standard to ensure the least resources, including water, are used to achieve the best possible result.

It is strongly recommended textile floor covering cleaning technicians be sought that are members of a recognized industry association, with proven training qualifications and a high level of expertise. They should also have proven compliance with workplace health and safety requirements, including risk assessments, safe work methods, job safety analysis and an understanding of basic infection control procedures.

Textile floor covering owners should be aware that textile floor coverings can become permanently stained or damaged by certain soiling or use conditions and that even corrective cleaning may not always be able to reverse the damage caused to the textile floor covering by soiling, staining and lack of proper maintenance (including installation or manufacturing defects). Specialized advanced levels of treatments that are not covered in this Standard may be available.

If any doubt exists before cleaning is attempted as to the appropriate method of cleaning a particular textile floor covering, the textile floor covering manufacturer's warranty statement and instructions should be followed. If the textile floor covering manufacturer's instructions are not available, a competent person with extensive experience in textile floor covering cleaning maintenance should be consulted.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Textile floor coverings—Cleaning maintenance of residential and commercial carpeting**

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard provides requirements, techniques and guidelines for cleaning maintenance of residential and commercial textile floor coverings.

NOTE: The term ‘textile floor covering’ is applicable to broadloom, sheet and modular or tile carpeting.

1.2 OBJECTIVE

The objective of this Standard is to provide cleaning practitioners, textile floor covering manufacturers, wholesalers, retailers, specifiers and consumers with minimum requirements for cleaning maintenance programs and cleaning techniques to enable textile floor coverings to be kept in a good, clean and hygienic condition.

1.3 NORMATIVE REFERENCES

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS/NZS

1715 Selection, use and maintenance of respiratory protection devices

1.4 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2454 and those below apply:

1.4.1 Competent person

A person who has acquired, through education, training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the task required.

1.4.2 May

Indicates the existence of an option.

1.4.3 Shall

Indicates that a statement is mandatory.

1.4.4 Should

Indicates a recommendation.

SECTION 2 GUIDELINES ON TEXTILE FLOOR COVERING MAINTENANCE

2.1 PLANNING A MAINTENANCE PROGRAM

A maintenance program should be established at the time of the development and completion of the textile floor covering specification. Just as specifications have to be concerned with traffic volume and soiling rates, so too does the maintenance program. For example, offices, restaurants, cafeterias, hospitals, and lounges are areas where accidental spills and stains contribute to overall soiling. In order to attend to such mishaps as quickly as possible, routine procedures need to be established.

Whatever the nature of the installation, it is necessary to prepare a system for dealing with soiling and to set up a program of maintenance (see Table 1 for a recommended maintenance program, Table 2, which summarizes the applicability of various cleaning techniques to textile floor covering constructions, and Appendix H, which provides guidance on other factors related to maintenance).

Textile floor coverings can only provide reasonable service if they receive appropriate care and attention. Failure to exercise the basic rules of good maintenance, and to choose the proper maintenance system, will lead to a drastic reduction in the useful life of a textile floor covering and possible detrimental effects on the health of building occupants. Textile floor covering maintenance programs should be geared towards extracting pollutants from the textile floor covering and reducing exposure to potentially harmful indoor pollutants.

The three elements essential to an effective maintenance program are—

- (a) thorough and frequent vacuuming;
- (b) immediate spot removal and interim maintenance cleaning; and
- (c) corrective cleaning.

NOTE: Appendix C lists some common household chemicals which may damage textile floor coverings.

2.2 FREQUENT VACUUMING

Dry soil removal shall be conducted in accordance with Appendix A and B. It should be conducted at the frequencies recommended in Table 1. Thorough vacuum cleaning using several passes removes most loose dry soiling. Spots and spills should be treated immediately.

NOTE: Appendices D and E provide guidance on the removal of stains from textile floor coverings.

2.3 INTERIM MAINTENANCE CLEANING METHODS

Interim maintenance cleaning is carried out to improve the overall appearance of the textile floor covering by removing surface soiling, while keeping drying times to an absolute minimum. Interim maintenance cleaning shall be carried out in accordance with Appendix A and B. It shall be carried out on a weekly, monthly or on-occasion basis. Methods include wet foam (encapsulation), foam aerosol spray, absorbent bonnet, liquid shampoo and dry foam (may be followed by wet vacuum), absorbent compound extraction and water-based cleaning methods such as hot water injection and extraction (commonly called 'steam cleaning') or liquid shampoo in combination with hot water injection and extraction.

NOTE: In public and commercial buildings, depending on the level and type of soiling materials in and on the pile of the textile floor covering, interim maintenance cleaning can be used between planned corrective cleaning operations but it should not be used as a substitute for corrective cleaning.

2.4 CORRECTIVE CLEANING METHODS

Corrective cleaning includes monthly, seasonal and on-occasion programs which use water-based cleaning systems that attempt to remove soiling from deep within the pile of the textile floor covering. Corrective cleaning shall be carried out in accordance with the precautions in Appendix A and B. Methods such as hot water injection and extraction or liquid shampoo in combination with hot water injection and extraction are used. These methods can be used in combination as required to refresh the pile and remove discolouring agents from textile floor coverings that have been subjected to a large range of soiling conditions.

The textile floor covering cleaning technique and frequency used depends on the location and usual traffic volume. The recommended maintenance program set out in Table 1 should be followed.

TABLE 1
RECOMMENDED MAINTENANCE PROGRAM

Location	Usual traffic volume	Recommended maintenance program	Recommended frequency	Minimum frequency
Residential All areas	Light	Full vacuum	2 times per week	Weekly
		Spot and stain removal	Daily—as soon as possible (asap)	Daily—asap
		Interim maintenance clean	Every 6 months	Every 12 months
		Corrective clean	Every 12 months	Every 24 months
Commercial Executive offices	Light	Vacuum traffic areas	3 times per week	2 times per week
		Full vacuum	2 times per week	Weekly
		Spot and stain removal	Daily—asap	Daily—asap
		Interim maintenance clean	Every 9 months	Every 18 months
		Corrective clean	Every 18 months	Every 36 months
Commercial Clerical offices, hospital wards, and hotel bedrooms	Medium	Vacuum traffic areas	4 times per week	3 times per week
		Full vacuum	3 times per week	2 times per week
		Spot and stain removal	Daily—asap	Daily—asap
		Interim maintenance clean	Every 6 months	Every 12 months
		Corrective clean	Every 12 months	Every 24 months
Commercial Corridors and foyers, ground floor shops, hotel lounges, kindergartens and school classrooms	Heavy	Vacuum traffic areas	Daily	2 times per week
		Full vacuum	Daily	3 times per week
		Spot and stain removal	Daily—asap	Daily—asap
		Interim maintenance clean	Every 3 months	Every 6 months
		Corrective clean	Every 6 months	Every 12 months

(continued)

TABLE 1 (continued)

Location	Usual traffic volume	Recommended maintenance program	Recommended frequency	Minimum frequency
Commercial	Very heavy	Full vacuum	Daily	Daily
Restaurants, school corridors, and hospital public areas		Spot and stain removal	Daily—asap	Daily—asap
		Interim maintenance clean	Monthly	Every 2 months
		Corrective clean	Every 3 months	Every 6 months

NOTES:

- Table 1 is a guide to cleaning maintenance. The frequency of carrying out the methods nominated depends on the assessment of the traffic rating, soiling types, textile floor covering construction, and health considerations.
- When vacuuming, spot and stain removal, and interim cleaning maintenance methods no longer produce an acceptable visual or physical appearance, or these maintenance methods have not been used or used properly, corrective cleaning should then be used. If the textile floor covering is maintained properly by good vacuuming, proper spot and stain removal, and regular interim maintenance cleaning of the textile floor covering, corrective cleaning of the textile floor covering may not be required.
- The traffic volumes of light/medium/heavy/very heavy should not be confused with terms and definitions used in end-use classification schemes, which are based on a textile floor covering's performance due to traffic. The traffic volume for cleaning purposes refers to the number of persons using an area and contributing to light soiling, medium soiling, heavy soiling and very heavy soiling.
 Vacuum traffic areas see Appendices A and B, refer to dry soil removal.
 Full vacuum see Appendices A and B, refer to dry soil removal.
 Spot and stain removal see Appendices D and E.
 Interim maintenance clean see Appendices A and B, refer to interim maintenance cleaning.
 High moisture corrective clean see Appendices A and B, refer to corrective cleaning.
- Vacuuming is carried out in either of three ways, as follows:
 - Spot vacuuming* The textile floor covering is vacuumed to remove only visible soil, dust and litter.
 Note: Spot vacuuming should only be carried out in areas where there is limited traffic and minimal volumes of walked in and accumulated surface dust. Spot vacuuming should not be carried out in entrance area or heavily trafficked areas and should be supplemented by full vacuuming of all carpeted areas at least weekly.
 - Vacuuming traffic areas* The textile floor covering is vacuumed only in the areas of foot traffic. Edges where traffic and soil are light may not require to be vacuumed as often as traffic areas where most soiling occurs.
 - Full vacuuming* Every area of textile floor covering is thoroughly vacuumed, preferably using a vacuum cleaner with a rotary brush attached. In commercial cleaning, heavy duty canister, back-pack or upright vacuum cleaners fitted with power brushes should be employed.
- Recommended frequencies are based on normal or average occupancy rates and traffic volumes. Minimum frequencies assume lower occupancy rates and traffic volumes.
- Carpet sweepers, hand held battery and back-pack vacuum cleaners as well as wide area vacuum cleaners may be used in conjunction with the recommended frequency of vacuum cleaning for removal of surface litter.
- Within the locations described in the above table there will be areas which require greater or lesser attention.
- Pile lifter vacuum cleaners are described in Appendix A. Where available, it is recommended that they are used in a programmed frequency. They should be used from 3 monthly to 12 monthly depending on traffic and soiling type to remove soil from within the pile and raise the pile in traffic areas.
- The option of more frequent corrective cleaning should be considered.

TABLE 2
SUMMARY OF THE APPLICABILITY OF CLEANING APPARATUS TO TEXTILE FLOOR COVERINGS

Cleaning apparatus	Textile floor covering construction						Comments
	Loop pile	Cut pile*	Hard-twist	Semi-shag	Shag-pile	Oriental rugs and similar	
Carpet sweeper	√	√	√	√	X	√	Only removes surface debris and dry soil (litter); does not clean deep down (see Appendix A and Appendix B)
Suction cleaner	√	√	√	√	√	√	May have reduced efficiency on textile floor coverings with impervious backing and on direct stick textile floor coverings (see Appendix A and Appendix B)
Suction cleaner with revolving bar and bristle strips	√†	√	√	√	X	√	Not suitable for direct stick textile floor covering installations; may cause fuzzing on certain loop pile textile floor coverings (see Appendix A and Appendix B)
Suction cleaner with revolving bristle strips	√†	√	√	√	√	√	Generally suitable for textile floor coverings with impervious backing and direct stick textile floor coverings; may cause fuzzing on certain loop pile textile floor coverings (see Appendix A and Appendix B)
Single or multi-brush/bonnet rotary or oscillating shampooer	√†	√	√	√	√	X	Generally suitable for cut pile textile floor coverings; raise pile with rake or brush when still moist. Efficient pile surface cleaner (see Appendix A and Appendix B)
Cylindrical brush shampooer	√†	√	√	√	√	X	Generally for periods between corrective cleaning cycles; not suitable for heavily soiled textile floor coverings (see Appendix A and Appendix B)
Smooth wand (push/pull) attachment for hot water injection and extraction	√	√	√	√	√	√	Effective deep-cleaner; efficient surface cleaner (see Appendix A and Appendix B)
Rotary extractor—Attachment for hot water injection and extraction	√	√	√	√	√	√	Effective deep-cleaner; efficient surface cleaner (see Appendix A and Appendix B)
Cylindrical brush extractor	√†	√	√	√	X	√	Effective deep-cleaner; efficient surface cleaner (see Appendix A and Appendix B)

(continued)

**Documents**

Document Sharing Hub

COPYRIGHT

TABLE 2 (continued)

Cleaning apparatus	Textile floor covering construction						Comments
	Loop pile	Cut pile*	Hard-twist	Semi-shag	Shag-pile	Oriental rugs and similar	
Absorbent compound cleaner	√	√	√	√	√	√	Often categorized as a 'surface cleaning' technique but it is also an effective cleaning system as part of a maintenance program (see Appendix A and Appendix B)
Carpet washing machine (i.e. off-site textile floor covering cleaning)	√	√	√	√	√	√	Efficient cleaning technique, but may cause shrinkage with jute and cotton backings; use only if the textile floor covering can be economically removed and satisfactorily refitted.

LEGEND

√ = suitable method

X = unsuitable method

* Includes velour, velvet, saxony and plush.

† Not recommended for wide gauge loop pile textile floor coverings

NOTES:

- 1 Consult and follow the textile floor covering manufacturer's warranty statement and instructions. If the textile floor covering manufacturers' instructions are not available, a competent person with extensive experience in textile floor covering cleaning maintenance should be consulted.
- 2 NOTE: Hot water injection and extraction cleaning is commonly referred to as steam cleaning.

SECTION 3 CLEANING CHEMICALS

3.1 SCOPE OF SECTION

This Section provides requirements for chemicals used in textile floor covering cleaning methods.

3.2 SOIL SUSPENSION

Soil suspension is the action of the cleaning agent on the soil to allow the soil to be removed by extraction means. The following four elements should be considered when using chemical cleaning methods:

- (a) *Chemical action* Cleaning chemicals are applied to the textile floor covering to emulsify, breakdown, suspend or otherwise loosen soiling from the surface of, or within the pile of the textile floor covering, ready for removal.
- (b) *Heat and temperature* Heat or raised temperature increases most chemical activity. Cleaning agents generally work better at raised temperatures but dyes may become mobile or fibres may not withstand excess temperatures.
- (c) *Agitation* Agitation helps loosen soiling and helps distribute chemicals evenly and thoroughly.

Insufficient agitation may limit the results of cleaning and excess agitation may result in damage to the fibres or the integrity of the pile or texture style.

- (d) *Time* Chemical action requires time. The time is typically 5 min to 20 min. Refer to the chemical manufacturer's directions for appropriate dwell times.

NOTE: Extended dwell times may adversely affect some fibres or dyes but insufficient dwell time may not allow chemical to reach maximum effectiveness.

3.3 GENERAL COMPOSITION AND REQUIREMENTS

3.3.1 General

Detergents and other chemicals which may be used for spot and stain removal shall not contain any chemical(s) (e.g. optical brighteners) that can cause damage, promote deterioration or cause photo-yellowing of any textile, adhesive or dyestuff in the textile floor covering. Quaternary biocides shall not be used on stain resistant treatments.

NOTE: Polyamide (nylon) textile floor coverings are generally not adversely affected by highly alkaline chemicals. However, consideration needs to be given to whether a combined topical stain/soil resistant or soil resistant finish only, has been applied. If these finishes have been applied to the textile floor covering, the detergent or cleaning chemicals used need to be anionic or non-ionic in character, or a combination thereof, and are required to have a pH not greater than 10.0 at use dilution (see Clause 3.3.2).

3.3.2 pH value

Unless otherwise recommended by the textile floor covering manufacturer, chemicals used shall have a residual pH in the range 5.5 to 7.0, with an at-use dilution in the range from 4.0 to 10.0.

NOTE: More acidic or alkaline detergent solutions are unsuitable, as residues left after cleaning are damaging to fibres and textile floor covering dyes. It is recognized that certain synthetic polymers such as polyamide (nylon), polypropylene, particularly when solution dyed, are generally not adversely affected by higher pH than specified above. However, cleaning technicians may have difficulty identifying complex pile fibre mixtures and the fibres used in backings. Therefore, the above limits have been set to promote generally safe working and use conditions.

3.3.3 Determination of residual pH

The procedure shall be as follows:

- (a) Take 2 g of undiluted sample and evaporate it to dryness in a 100 ml glass beaker at 102°C to 105°C for 2 h.
- (b) Cool and redissolve soluble matter in 50 mL of distilled water.
- (c) Determine pH at 20°C.

3.3.4 Acid rinses

Higher alkaline pH chemicals than specified in Clause 3.3.2 are sometimes used in detergents specific to textile floor coverings to hasten cleaning action, or to react with greasy soil. If the detergent used gives a pH of 8.5 or greater when tested (in accordance with Clause 3.3.3), the alkalinity shall be neutralized immediately following cleaning. Mild acid rinses are now widely available. The chemical manufacturer/supplier's directions shall be carefully followed. These products can be used as a rinse or after-spray and are generally beneficial for wool, silk and cellulosic fibres. The concentration shall be such that after respraying, a moistened pH test paper applied in the pile of the textile floor covering shall give a reading within a 4.5 to 7.0 pH range.

3.3.5 Resoiling

Chemicals applied to the textile floor covering should leave no residue on the pile fibres of the textile floor covering after cleaning that would create a greater propensity for the textile floor covering to become resoiled when compared to a new textile floor covering of the same type.

3.3.6 Safety standards and regulations

In Australia, material safety data sheets, in accordance with the standards and regulations of Safe Work Australia, should be provided on-site whenever a textile floor covering is being cleaned with chemical products.

NOTE: Chemicals used have to be labelled in accordance with regulations concerning work health and safety, poisons, dangerous goods and transportation of dangerous goods.

3.3.7 Colour-fastness

Chemicals shall be used which, when applied in the intended manner to a textile floor covering, do not cause colour bleeding, change of pile texture or any other damage to the textile floor covering. This should be checked first by applying the chemicals to a sample of the textile floor covering or to an inconspicuous part of the installed textile floor covering.

NOTE: The textile floor covering sample tested should include all of the colours in the textile floor covering.

3.4 SPECIFIED REQUIREMENTS FOR CLEANING CHEMICALS

3.4.1 Liquid shampoo

The following applies when using the liquid shampoo method:

- (a) A chemical prespray (sometimes referred to as 'traffic lane cleaner') should be used for softening and loosening soil bonded to the surface of the textile floor covering. The prespray should be compatible with the particular type of shampoo to be used and be safe on all common fibres, textile floor covering backings and adhesives when used as directed.

- (b) A liquid chemical shampoo or encapsulation solution should be used which, when mixed as directed, generates a copious, dense, mechanically stable, moist (but not wet) foam on the surface of a textile floor covering. Shampoo or encapsulation solution should be used that leaves a dry, friable residue which is totally removable by gentle brushing when a sample of its foam is allowed to air-dry on a clean glass surface. It should not contain optical brighteners or chemical constituents which are hygroscopic.
- (c) Chemicals such as deodorants, perfumes and disinfectants for special situations should be considered.
- (d) A small quantity of concentrated defoamer for addition to the recovery tank of the wet pick up vacuum cleaner may be required.

3.4.2 Absorbent compound extraction cleaners

Only absorbent compound extraction cleaners that are non-toxic, contain low environmental impact ingredients and low volatile organic compounds shall be used.

3.4.3 Hot water injection and extraction cleaners

When using the hot water injection and extraction method, the following applies:

- (a) Detergents that are readily and totally soluble in the water available shall be used in areas of varying water quality.

NOTE: The limit of water hardness for effective cleaning is often stated on the product label. If no such statement is made, this information should be obtained from the detergent manufacturer.

- (b) A chemical prespray shall be used for softening and loosening soil bonded to the surface of the textile floor covering. This shall be non-damaging to all textile floor covering pile fibres, backings and adhesives when used as directed.
- (c) A chemical detergent shall be either in the form of a liquid or powder. When applied according to the detergent manufacturer's instructions, the detergent shall be non-damaging to all textile floor covering pile fibres, backings and adhesives.

NOTE: If the product is a powder, it should be readily and completely soluble in cold water.

- (d) A defoamer concentrate shall be used for the control of foam during extractions, if required.
- (e) Chemicals such as deodorants, perfumes, and disinfectants may be required in special situations, as may spotting products. See Clause 3.5.

3.4.4 Absorbent bonnet cleaning chemicals

When using the bonnet cleaning method, the following applies:

- (a) Detergents that are readily and totally soluble in the water available shall be used in areas of varying water quality.
- (b) A chemical prespray shall be used for softening and loosening soil bonded to the surface of the textile floor covering. This shall be non-damaging to all textile floor covering fibres, textile floor covering backings and textile floor covering adhesives when used as directed.
- (c) The chemical shall have a lubricative quality to minimize friction of the bonnet.
- (d) Chemicals such as deodorants, perfumes, and disinfectants may be required in special situations, as may spotting products. See Clause 3.5.

3.5 SPOT AND STAIN REMOVAL

Spot and stain removal chemicals shall be compatible with cleaning agents. Such chemicals shall be of a type that will not harm textile floor coverings when used in accordance with the chemical manufacturer's recommendations.

The following requirements apply when using spot and stain removal chemicals:

- (a) *Water soluble spotters* Immediately after use, the excess water-soluble spotter shall be removed from the textile floor covering by a repeated absorption technique using clean white towelling moistened with clean water or by rinse extraction.
- (b) *Dry solvent spotters* Immediately after use, the excess dry solvent spotter shall be removed from the textile floor covering by a repeated absorption technique using clean white towelling.

Chemical de-colouring agents such as oxidizing agents (sodium hypochlorite, hydrogen peroxide and the like) and reducing agents such as dye stripper (sodium metabisulphite) shall only be used with extreme caution, as these can cause damage to certain fibres.

Strong alkalis (over pH 8.5; see Clauses 3.3.2 and 3.3.3) shall only be used with extreme caution and strictly in accordance with manufacturer's guidelines and safety precautions.

Strong acids (such as some rust removal chemicals that contain hydrofluoric acid) shall only be used with extreme caution and strictly in accordance with manufacturer's guidelines and safety precautions.

Solvents or detergents with a large concentration of solvent shall be used with caution on textile floor coverings that may contain component or backing materials that are affected by solvents.

Where any doubts exist as to the best method of cleaning a particular type of textile floor covering, expert advice shall be sought before cleaning is attempted.

NOTE: Some spills, when allowed to age on fibres, can become fixed. The resulting stain cannot always be removed. Appendices D and E provide guidance on the removal of stains.

3.6 ENZYME-CONTAINING SPOT AND STAIN REMOVERS

When using enzyme-containing substances, contact with skin, eyes and respiratory system needs to be avoided, and therefore the use of safety equipment is essential. Only coarse, non-atomizing spray heads shall be fitted to containers, and containers shall be labelled. The textile floor covering should be rinsed thoroughly and repeatedly after use, preferably with hot water, to remove enzyme-containing residues. For correct respiratory protection, reference shall be made to AS/NZS 1715.

3.7 RISK MANAGEMENT PROCEDURES

Prior to the cleaning process, consideration shall be given to all relevant safety and workplace health factors to prevent injury, poisoning and infection either directly or indirectly from the use of chemicals or equipment.

Such factors include safe and legal vehicle operation. The safety of workers and consumers during and after the cleaning operation shall be considered.

NOTE: WHS laws apply and need to be complied with. These include the Safe Work Australia *Model Work Health and Safety Regulations*. The Safe Work Australia *National Code of Practice for the Control of Workplace Hazardous Substances* provides practical guidance on how to comply with the regulations.

Selection, use and maintenance of respiratory protective equipment shall conform with AS/NZS 1715.

Trip/slip hazards shall be identified and marked with warning signs.

Hoses that cross pedestrian walkways shall be marked with warning signs to prevent trip hazards.

Building occupants should be informed, as soon as possible, of identifiable health or safety hazards. Questions regarding matters of public health should be referred to a competent medical authority for evaluation and advice.

Proper consideration shall be given to the method to be used to ensure maximum removal of substances known to affect the health of building occupants.

All possible steps shall be taken to avoid overwetting of textile floor coverings and furnishings and the transfer of timber stains and rust to the textile floor covering during cleaning.

Provision shall be made for removal of cleaning wastes from the site in accordance with relevant regulations. Discharge to storm water systems, roadways and waterways is never acceptable.

Adequate ventilation shall be provided during and after cleaning to avoid odours and to speed drying time to minimize slip fall accidents.

Consideration shall be given to the control of infection through cross contamination and personal exposure.

3.8 INSPECTION AND PRE-TESTING

3.8.1 General

It is essential to recognize that fibres can be chemically sensitive and be easily damaged by aggressive chemicals or excessive agitation. Care should be taken in the selection of cleaning methods and chemicals, including spot and stain removal chemicals. Before commencing any cleaning operation, inspection and pre-testing shall be conducted. If a maintenance program with all relevant details has not been specified or is unavailable, pile fibre and construction identification of the textile floor covering shall be carried out to determine the suitability of the method and chemistry.

The results of the pre-testing shall be reported to the consumer or their representative for their consideration.

The principles for inspection and pre-test are as follows:

- (a) Inspection—to determine the textile floor covering pile fibre, backing fibres, construction and how the textile floor covering has been installed is as important as determining the nature of the soiling to consider if any possible cleaning-associated problems may arise.
- (b) Pre-testing—to ensure suitability of cleaning methods and chemicals.

NOTE: Only a thorough inspection and pre-test can alert the textile floor covering cleaning technician to some potential problems that may be encountered during and after the cleaning operation.

3.8.2 Inspection

The procedure for inspection should be as follows:

- (a) Inspect the textile floor covering thoroughly, carefully noting in particular its fibre type (see burning tests to aid fibre identification in Appendix G), weave, construction, density and condition, especially visibly soiled or worn areas.
- (b) Examine the textile floor covering construction and determine whether seams may open during cleaning. Where possible, characterize or identify visible spots and spillages.

- (c) When observations from the burning test have been noted and once the pile fibre type has been identified, select a suitable cleaning method.
- (d) Confirm that the selected cleaning process is compatible with the textile floor covering installation and the textile floor covering and its colour(s) by carrying out chemical pre-testing.

3.8.3 Pre-testing

The procedure for pre-testing should be as follows:

- (a) Find an inconspicuous area of the textile floor covering that contains all fibre types and colours that are used in the textile floor covering.
- (b) Apply a small amount of each chemical that is intended to be used in the cleaning process to the area.
- (c) The test should be carried out with the chemicals at the temperature at which they are used in the cleaning procedure.
- (d) Do not allow chemical to 'wet' into normally visible areas of textile floor covering.
- (e) Allow five minutes dwell time for chemicals.
- (f) Fold some white tissue into a thick wad and press it firmly onto the test area. Allow the liquid to transfer to the wad. Allow one minute for liquid to transfer.
- (g) Remove and unfold the tissue and hold it up to the light for inspection.
- (h) Check for colour transfer to the tissue.
- (i) If colour is evident on the tissue, do not proceed with the cleaning method.
- (j) If colour is not evident on the tissue, continue the test.
- (k) Allow the test area to dry. Assist drying with a hair dryer if necessary.
- (l) Using a magnifying glass, look for signs of discoloration or colour migration to other nearby fibres.
- (m) Look also for colour change and texture change. If a colour change or texture change is detected, consult and reach agreement with the consumer prior to proceeding with the cleaning procedure.

NOTES:

- 1 If pre-testing reveals no problems then it may be relatively safe to proceed but, throughout the job be prepared for any problems that may arise.
- 2 Soiling from other areas may affect colour or texture.
- 3 Certain dyestuffs on certain fibres can move from the original fibres in the presence of fluid. This is referred to as wet crocking.
- 4 The dyes can transfer from wet or damp parts of the textile floor covering to other sections of the textile floor covering. While it can happen during cleaning or in the early stages of drying, it often occurs in the very last stages of drying.
- 5 Where possible, high density long pile textile floor coverings should be left overnight as they have a tendency to hold more moisture and dry slower. As a result, colour bleeding will occur just before complete drying.
- 6 Dye transfer or dye loss can also occur in a dry state in some textile floor coverings and is referred to as dry crocking.

3.9 DISPOSAL OF EXTRACTED CLEANING WASTE

Waste materials extracted from textile floor coverings during cleaning are potentially detrimental to the environment and may also be detrimental to people.

Dry solid wastes from vacuuming may contain significant levels of respirable, potentially harmful biological and chemical allergens. Solid waste shall be contained in resealable disposable bags, preferably within disposable bags fitted to vacuum cleaning machinery in regular use.

Liquid wastes may contain high levels of extracted solid materials (dirt), oily and greasy materials, biological matter and pathogens, plus chemical residues from detergents and other chemical products applied to textile floor coverings.

Both liquid and solid wastes extracted from textile floor coverings shall be collected and if needed, neutralized, filtered or treated. Residual waste matter has to be disposed of in accordance with local, regional, state or federal regulations in a manner that will not constitute a pollution hazard to either human or environmental health.

Where required, advice from local health and environment offices should be sought on the appropriate method of disposing of extracted wastes.

Appropriate personal protective equipment and appropriate precautions should be used to eliminate contact with any waste.

APPENDIX A

CLEANING APPARATUS

(Normative)

A1 INTRODUCTION

This Appendix specifies requirements for the apparatus used in textile floor covering cleaning methods.

A2 CLASSIFICATION

Textile floor covering cleaning apparatus is classified into the three following categories:

- (a) Dry soil removal apparatus.
- (b) Interim maintenance cleaning apparatus.
- (c) Corrective cleaning apparatus.

A3 MAINTENANCE OF APPARATUS

Machinery and apparatus used for the cleaning and maintenance of textile floor coverings shall be serviced and maintained according to the machinery manufacturer's recommendations.

Machinery components and accessories that are essential to the performance of a unit shall be cleaned, inspected and, where necessary, replaced on a regular basis according to the manufacturer's recommendations.

Particular attention should be paid to filtration systems, vacuum seals, joins and gaskets, hose integrity, cleaning brushes, wheels, casters, floor tools and wands, and waste collection containers.

Cleaning and sanitizing of equipment or wet or soiled components shall be carried out prior to the equipment entering premises or moving between sections of facilities, such as hospitals and aged care facilities that house vulnerable persons, to help prevent cross contamination and infection.

A4 DRY SOIL REMOVAL APPARATUS

One or more of the following apparatus shall be used for dry soil removal:

- (a) *Carpet sweeper* A manually operated machine available in several sizes and having a soil receptacle. See Figure A1(a). Carpet sweepers are capable of removing surface soil and small litter both ahead and behind the brush assembly.

NOTE: This machine is widely used for the touching up of textile floor coverings in the home, in restaurants, theatre lobbies and other commercial establishments. It is particularly useful at times when noisy equipment cannot be used but should not be seen as a substitute for vacuum cleaning.

- (b) *Suction cleaner* An electric machine, having a suction head usually fitted with stationary brushes that are either variable or fixed in height. See Figure A1(b) and Table 1. Included in this category is the Backpack Vacuum Cleaner. This is a mains electric or battery powered canister vacuum cleaner (industrial type), which relies on suction power with capabilities for dry pick-up only. It is worn on the back via shoulder straps and safety harness.

NOTE: All suction cleaners rely upon a stream of air being drawn across and through the pile to remove litter and loose surface soils.