APPENDIX A:

GUIDE FOR THE CONTROL OF NOISE FROM LAMINATE AND WOODEN FLOORING SURFACES

The Development And Production Of A Guide For Noise Control From Laminated And Wooden Flooring

The Building Performance Centre
Napier University

GUIDE FOR THE CONTROL OF NOISE FROM LAMINATE AND WOODEN FLOORING SURFACES

DRAFT GUIDANCE

DEFRA DETAILS

Introduction

Hard flooring surfaces such as timber laminates, sanded floorboards and ceramic tiles have become increasingly popular in recent years. This trend has, however, led to an increasing number of concerns with regard to noise and disturbance to neighbours, specifically in apartments and flats.

This guide has been prepared by the Department for Environment, Food and Rural Affairs to highlight the issue and provide guidance on good practice future complaints and dealing with those which arise.

The findings and recommendations within this guide have been based on a detailed research project undertaken on behalf of Defra by Napier University's Building Performance Centre.

Background

The issue relates specifically to impact noise caused by everyday domestic activities such as footsteps, dropped objects, scraping furniture or jumping children as heard within adjacent, lower properties. The increased prominence of impact sounds is commonly attributed to the increased incidence of hard timber over traditional carpeted floor surfaces boosted by recent shifts in the floor coverings markets, particularly within the DIY sector.

Neighbour impact noise becomes a problem once it is considered excessive. Whilst this point is problematic to objectively define it is frequently anecdotally identified by a sudden increase in footfall noise following the installation of a neighbour's new hard-finished floor in place of a soft finish such as carpet. Remedial possibilities in such circumstances, particularly for the affected downstairs resident are limited, precipitating the potential for complaints and a reduction in amenity. Effects of unwanted noise can include immediate annoyance and sleep disturbance as well as potential longer term health implications as highlighted by recent research showing causal links from noise exposure to hypertension and heart disease.

The recent research project had two key investigative strings. Firstly, a survey of over 5000 local authorities and registered social landlords was conducted in order to provide more details on the extent of the problem. Secondly, acoustic testing of a variety of hard floor finishes on various substructures were carried out. Some of the key findings of the survey are highlighted below.

Extent of problem

It is estimated that, of the 4.9m apartments/flats in the United Kingdom, 0.65% were sufficiently affected by impact noise last year to complain. This equates to approximately 31,000 households.

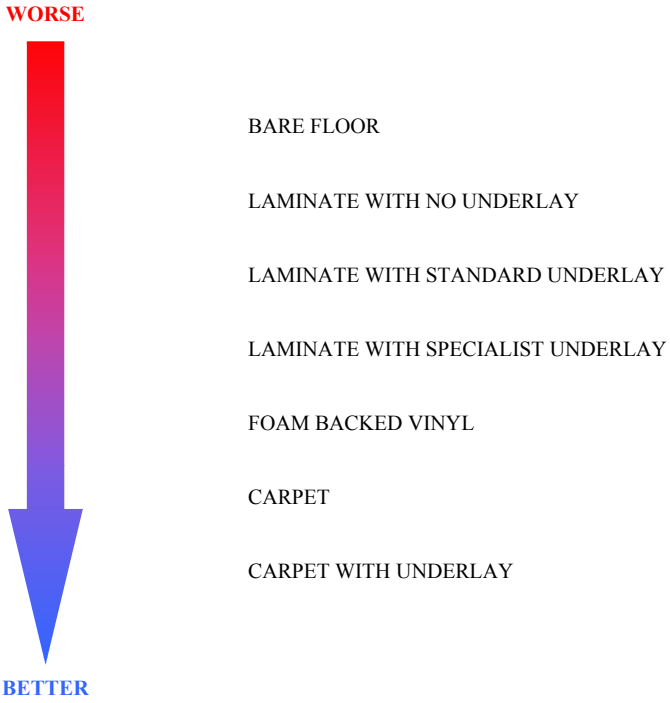
Floor structure

It was identified in the survey that the majority of complaints related to timber structures however, concrete floor structures whilst less likely are certainly not exempt from problems of impact noise.

Effect of removing soft floor finish

It was clearly identified that, when a soft floor covering such as a carpet is removed to be replaced by a hard floor finish, the amount of impact noise transmitted onto the dwelling below increases considerably. The likelihood of problems, however, depends significantly on the floor's inherent impact performance. Figure 1 illustrates the difference in impact noise transmitted with various floor finishes.

Figure 1: Relative impact noise performance of common floor coverings



Type of hard floor finish

The testing indicated that the poorest floor finish in terms of impact transmission was bare sanded timber floorboards.

Laminate and hardwood flooring without underlay both gave improvement over the bare floor. The performance difference between products was negligible. The difference between the various hardwoods and engineered wood floorings was also found to be relatively small. It was, however, found that thin laminates gave a marginally better performance than the thicker products due to a higher internal resilience and floor stiffness.

Use of underlay

It was found that most standard underlays available, for example from DIY retailers, gave a similar performance. On a timber floor, the benefit gained from an underlay was not particularly great. However, on a concrete floor the underlays provided significant benefit.

Specialistic acoustic underlays were also tested. It was found that these generally gave an improved performance over standard underlays, although in some instances the difference can be marginal. Again the benefit on timber floors was significantly lower than on concrete floors.

Use of tenancy agreements and conditions of sale

The study identified that clauses controlling the use of hard floor finishes in apartments could provide benefits in reducing the number of complaints. It is doubtful that the use of such clauses could infringe the human rights of the tenant.

Recommended methods of controlling the number of complaints

Raising awareness of the issue

One of the key measures in reducing the rate of complaints in the long term will be the ability of local authorities, registered social landlords and product suppliers to raise awareness of the issue with the general public.

This can be achieved through the distribution of the guide leaflet 'Noise from Laminate and Wood Flooring', which is available from Defra. We would also recommend that all local authorities, registered social landlords and product suppliers include details on the issue and the information available on their web sites and publications.

Tenancy and deed of condition clauses

Tenancy agreements and deed of condition clauses can be quite successful in reducing the instances of complaints. It is therefore recommended that, where registered social landlords or house builders have experienced complaints or are concerned about noise from laminate floors, a restrictive clause be inserted into the tenancy agreement or deed of condition of the property.

The following clause provides an example of suitable wording:

"You must obtain our prior written permission if you want to install a hard floor finish such as laminate or hardwood overlay, ceramic tiles or if you want to have bare floorboards in any room in your property. We will not refuse permission unreasonably however; it is likely that we will only grant permission if you live in a house or a ground floor flat. Permission is not required for the use of carpet tiles or foam backed linoleum.

As the use of laminated flooring could prejudice your neighbours enjoyment of their property due to noise transmission, if you carry out any of the above alterations without our written permission we will be entitled to restore the property to its previous condition during, or at the end of, your tenancy. If we do so, we are entitled to recover reasonable costs from you for carrying out this work."

It is recommended that the above clause be introduced for new housing, existing housing receiving new tenants and existing housing undergoing extensive renovation. It is not considered appropriate to introduce the clause retrospectively for properties which may already have hard floor finishes. This clause would also allow for conditions to be placed on the granting of permission for upper floor flats, such a condition could be - "*an approved high quality underlay must be installed*."

For house builders, the following clause provides an example which could be used within a deed of condition document:

"*As the use of laminated flooring could prejudice your neighbours enjoyment of their property due to noise transmission you must not install a hard floor finish such as laminate or hardwood overlay, ceramic tiles or bare floorboards in any room in your property. The use of carpets, carpet tiles, foam backed linoleum and any other soft floor finish is acceptable*."

An alternative less restrictive clause would be:

"*If you install a hard floor finish such as laminate or hardwood overlay, ceramic tiles etc, in any room in your property you must also install an approved high quality acoustic underlay*."

Physical mitigation measures

Whilst there are a large variety of methods of reducing impact sound transmission, the use of a resilient underlay is likely to be the only pre-emptive measure a person fitting a new hard flooring surface would consider to be reasonably practicable.

Whilst a slightly better performance can be achieved through the use of an *'*acoustic*'* underlay, it is unlikely that this would be considered an option for the majority of people installing a hard flooring surface where there is no history of problems with noise, given the high cost of the acoustic underlays currently available on the market – typically £10-20 per m^2 compared with the standard underlays at £1-3 per m^2.

Advantages of underlays**:**

- They reduce noise transmission to your neighbours.
- They prolong the life of your laminate or wood floor.
- They reduce noise and vibration in your own home.
- The floor is more resilient and reduces fall injuries.

To get the best performance from the underlay, it must not allow the wood floor or laminate to touch the perimeter walls or skirting.

Good practice guidelines for installing laminates and wood floors

Step 1 - lay your underlay so that it lies flat and is not uneven

Step 2 - ensure the underlay edges are abutted and do not overlap as this will create an uneven surface for your laminate /wood floor

Step 3 - lay the underlay so that it has at least 10cm extra, turned up at each perimeter wall

IF EXISTING SKIRTING NOT BEING REMOVED

Step 4 - lay the laminate/wood floor so that it stops at least 2cm from the wall or existing skirting

Step 5 - pull the underlay around the edge of the laminate (see over)

Step 6 - fix a small wood channel to the base of the skirting or wall, so that the underlay passes between the floor and channel

Step 7 - trim off any protruding underlay

IF USING NEW SKIRTINGS or REMOVING AND RE-USING OLD SKIRTINGS

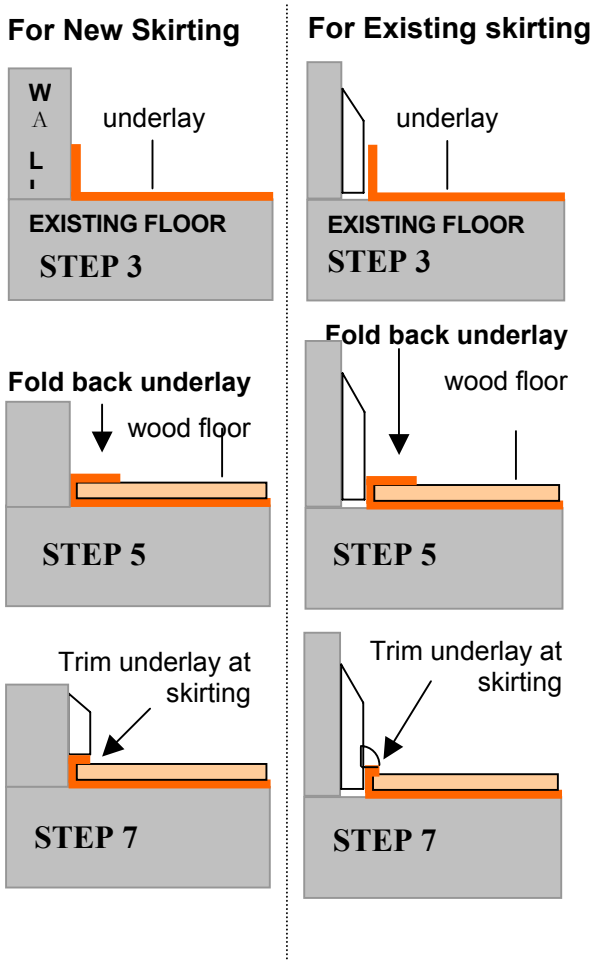
Step 4 - lay the laminate/wood floor so that it stops at least 2cm from the wall

Step 5 - pull the underlay around the edge of the laminate (see over)

Step 6 - fix the skirting to the wall, so that the underlay passes between the floor and skirting base

Step 7 - trim off any protruding underlay

The figure below illustrates the correct method of isolating the perimeter of the flooring material.



Dealing with complaints that have arisen

When a problem has occurred which is suspected to be due to excessive impact noise as the result of a hard floor finish it is recommended that the investigating organisation/person follows set procedures in order to isolate the source of the problem and identify the correct remedial measures or legal path to implement.

Initially it will be necessary to establish if the complaint is justified and disturbance is occurring. Local authorities and other bodies will already have procedures in place for determining if a complaint is justified.

If a complaint is justified, it will then be necessary to establish if this is due to unreasonable behaviour of the upstairs neighbour or if it is as a result of poor sound insulation. This can be achieved by carrying out sound insulation testing of the party floor.

At any point during this process the best method of resolving the problem is often mediation between the parties to establish a common understanding and agree on practical ways of minimising the disturbance.

If mitigation is unsuccessful, the remaining options are to take either legal or physical measures to resolve the problem.

A flow diagram has been prepared as presented at the end of this guide which will assist parties investigating complaints in establishing the best procedure for investigating and resolving complaints.

Legal options

Scenario 1 – A property with **no alterations** which could have reduced the sound insulation and with upper storey occupants not displaying anti-social behaviour.

Action under the Environmental Protection Act 1990 is unlikely to be successful given the outcome of the Baxter-v-Camden LBC case, however each case would be assessed individually with the 'matter of degree' influencing the eventual outcome. Also action under the Anti-social Behaviour Act 2003 would not be appropriate. Therefore in this scenario it is unlikely that a legal remedy is currently possible.

Scenario 2 – A property which has been **altered** by the occupier such that the sound insulation has potentially been reduced. The upper storey occupants not displaying anti-social behaviour.

In this situation it should be possible to take action under the Environmental Protection Act 1990.

Scenario 3 – A property with upper storey occupants displaying anti-social behaviour.

Action under the Environmental Protection Act 1990 could potentially be successful. Action may also be possible in this scenario under the Anti-social Behaviour Act 2003.

Mediation

From the social survey it was identified that by far the most common way to resolve problems with noise from neighbours is through encouraging them to talk to each other and explain their concerns. It is often the case that the resident upstairs is unaware of the problem and will be happy to discuss a solution.

If the parties have difficulty talking directly to each other, it is expected that the local authority or registered social landlord will be able to put the residents in touch with a free mediation service who are expert in dealing with disputes.

A good starting point in cases where an underlay has not been installed will be to suggest that a resilient layer is fitted. An agreement between the parties to share the cost of this may help to persuade the upper floor occupant. Alternatively laying rugs on the areas of the floor where problems are experienced most may be less costly and would be far more effective in reducing the noise level.

Physical remedies

Underlay

If the flooring finish is not laid on a resilient layer, improvement will be achieved by lifting the floor finish and installing an underlay. Details of the advantages of underlays and good practice for installation have been given earlier in this guide.

Rugs

The level of noise transmission can be significantly reduced by placing rugs onto the hard floor finish in the areas which are giving rise to the greatest level of disturbance, for example the hallways or children's play room.

Carpets

The most effective solution to the problem is to replace the hard floor finish with a carpet on an underlay.

Acoustic Ceilings

Where it is not possible to reduce the impact noise from above or in situations where airborne noise is also considered to be a problem, the best solution is to install an independent ceiling within the lower property.

An independent ceiling comprises of a timber framework supported from the walls and not the existing ceiling. The frame must create a minimum cavity depth from the existing ceiling to the bottom of the frame of 150mm. The cavity should incorporate 100mm thick glass fibre or mineral fibre insulation. Rigid polymer foam, such as polystyrene, should not be used. The framework should then be sheeted with two layers of plasterboard, the joints of which should be staggered and sealed with a flexible sealant.

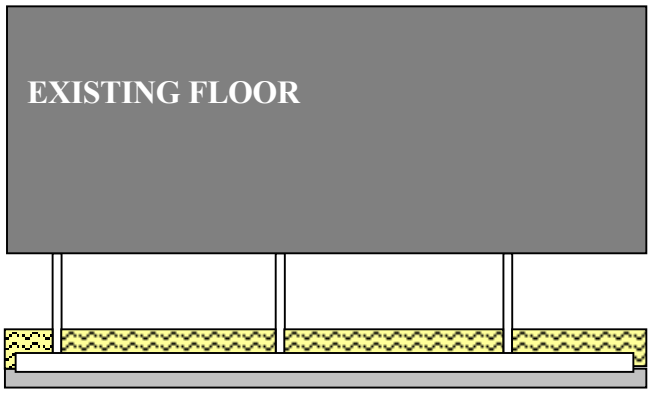
It is recommended that the available space for a new ceiling be established by measuring the distance from the top of the window and door frame to the underside of the ceiling. If the room has ornate cornicing, it is recommended that the occupant consult the Local Authority Planning Department with regard to any historic building restrictions prior to installing the ceiling.

An alternative to an independent ceiling is a suspended ceiling. This option will give a slightly reduced performance over an independent ceiling but may be more practical where head height is limited or there is a large span between walls.

A suspended ceiling comprises of a timber or metal framework supported from the existing ceiling using hangers. (Note: The existing ceiling finish should not be penetrated by the new supports.) The frame must create a minimum cavity of 100mm from the existing ceiling to the bottom of the frame. The cavity should incorporate 100mm thick glass or rock based mineral fibre quilt, not polystyrene or similar rigid plastic foam. The framework should then crossed at right angles with resilient metal bars. Manufacturers' installation instructions must be carefully followed. The ceiling should then be sheeted with two layers of plasterboard, the joints of which should be staggered and sealed with a flexible sealant.

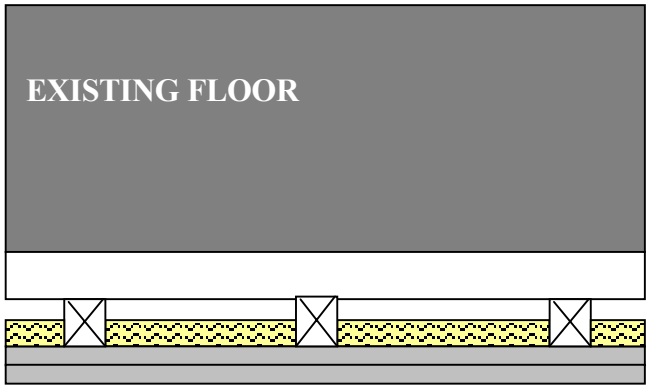
The diagram overleaf illustrates independent and suspended ceiling options.

Options for installing a suspended ceiling



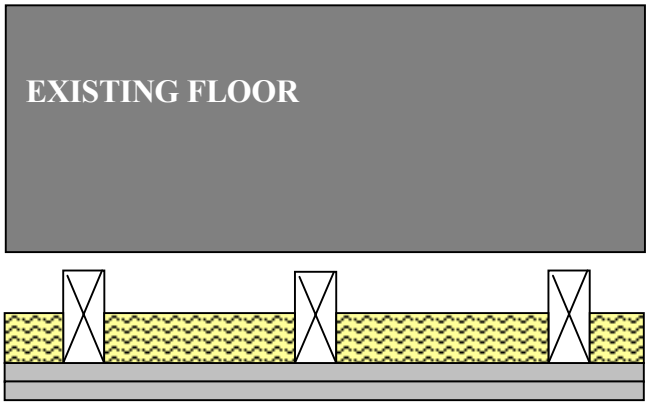
OPTION A

Suspended metal frame ceiling system with a minimum 150mm cavity, minimum 50mm mineral wool quilt and 1 layer of 15mm gypsum based board. Ensure metal frame does not touch perimeter walls, leave 15mm gap. Use flexible sealant to seal wall/ceiling junctions.



OPTION B

50x50mm ceiling battens and 50x50mm counter battens with 25mm mineral wool quilt and two layers of 12.5mm gypsum based board.
Ensure ceiling layers have overlapped joints. Ensure battens and counter battens do not touch perimeter walls, leave 15mm gap. Use flexible sealant to seal wall/ceiling junctions.



OPTION C

Independent ceiling joists not connected to existing floor. Minimum 150mm void to new ceiling layer. 50mm mineral wool quilt and one layer of 15mm gypsum based board.
Ensure ceiling joists do not touch existing floor. Use flexible sealant to seal wall/ceiling junctions.

ADDITIONAL INFORMATION

a) *Ceiling option chosen will depend on performance increased required and height possible within other features such as window surrounds.*
b) *Use of coving and cornicing will increase acoustic performance in addition to sealing wall/ceiling junctions.*
c) *For options A & B check that existing floor can take additional load.*
d) *For OPTION B timber joist floors first ceiling batten should run perpendicular to joist direction.*

An alternative to a suspended or independent ceiling is to install a floating floor. There are a number of options available on the market such as resilient battens or cradles etc.

A typical remedial treatment would be to install 55mm duel density resilient battens with a 25mm insulation quilt resting between the battens. The floor should then be finished with 18mm chipboard or equivalent to which a hard flooring finish could be applied. Care should be taken to isolate the new walking surface from the perimeter wall through the use of a flanking strip.

It should, however, be noted that these systems would require significant alterations to the property doors and may result in a step at the front door of the property.

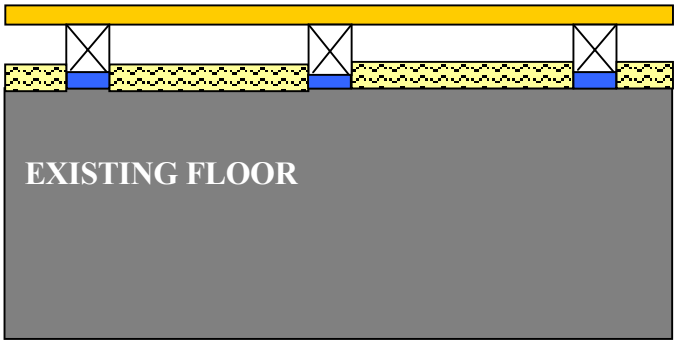
A further alternative, which would not require as extensive alterations to the doors and skirting, would be resilient overlay boards.

A typical remedial treatment would be a 10mm MDF or equivalent board bonded to 8mm foam or fibre underlay. These systems can vary in depth from 18mm to 40mm. Generally the thicker and heavier the system, the higher the performance that will be achieved.

The diagram below illustrates various floating floor options.

It should be noted that prior to undertaking any structural alterations a structural engineer should be consulted in order to ensure that the existing floor structure is capable of supporting the additional loading.

Options for installing a floating floor



OPTION A – Raft Floors

22mm Chipboard or floorboard decking laid on resilient battens: composed of dual density foam or fibres. Lay 25mm mineral wool quilt between battens not under. To achieve best performance install min. 5mm flanking strip between flooring edge and wall and skirting – see below.

OPTION B – Platform Floors

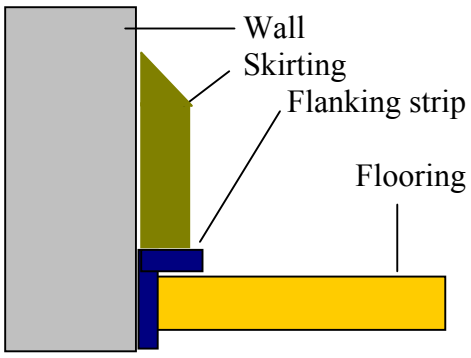
22mm chipboard or flooring boards resting 40mm rock wool batt insulation. To achieve best performance install flanking strip between flooring edge and wall / skirting - see below.

OPTION C – Shallow Deck Floors

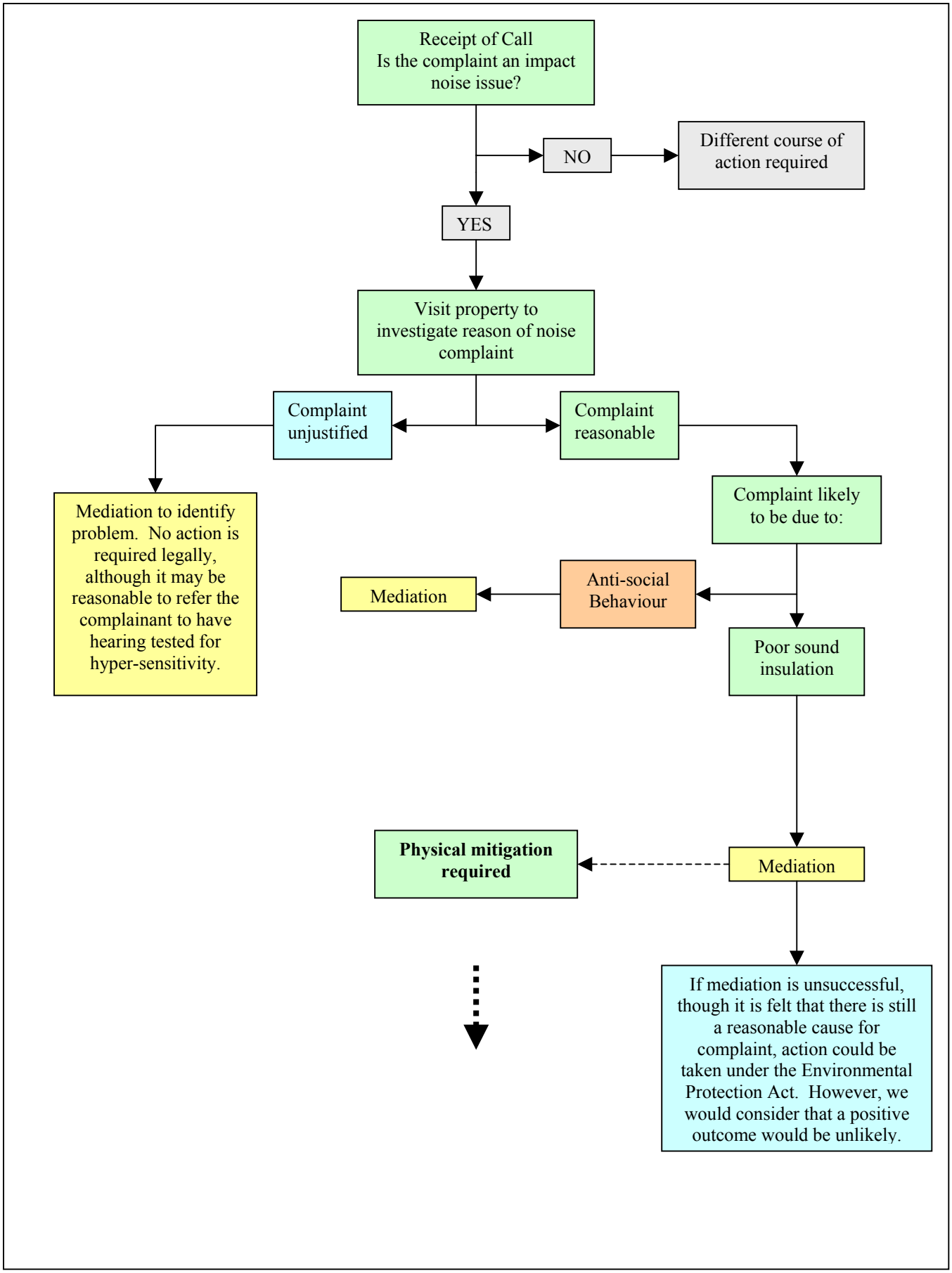
22mm chipboard pre-bonded to resilient layers composed of dual density foam or fibres. Do not use bead or extruded polystyrene. To achieve best performance install flanking strip between flooring edge and wall / skirting – see below.

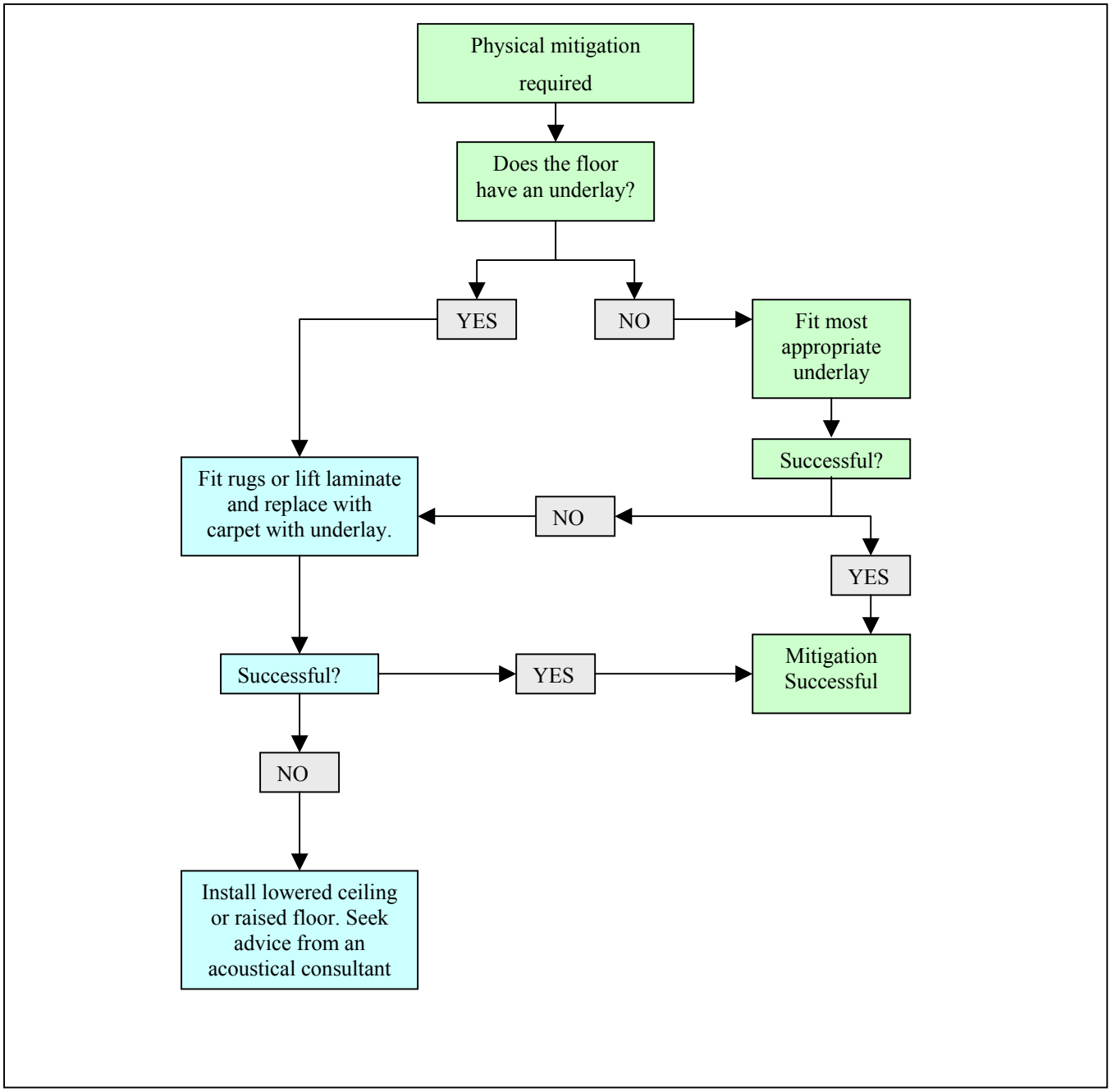
ADDITIONAL INFORMATION

e) Do not use bead or extruded polystyrene for resilient layers or flanking strips
f) Ensure all joints are well sealed
g) Ensure you install a flanking strip at all wall floor junctions.
h) For further info see www.pasm.org.uk



FLOWCHART FOR DEALING WITH IMPACT NOISE COMPLAINTS




Physical mitigation required
Does the floor have an underlay?
YES
NO
Fit most appropriate underlay
Successful?
NO
YES
Fit rugs or lift laminate and replace with carpet with underlay.
Mitigation Successful
Successful?
YES
NO
Install lowered ceiling or raised floor. Seek advice from an acoustical consultant

APPENDIX B:

NOISE ASSOCIATED WITH LAMINATE AND WOOD FLOORING

The Development And Production Of A Guide For Noise Control From Laminated And Wooden Flooring

The Building Performance Centre
Napier University

Noise Associated with Laminate and Wood Flooring

Thinking of replacing a carpet with a hard floor finish?

Do you live in a flat or apartment with neighbours below?

Please read this first!

Hard flooring surfaces such as timber laminates, sanded floorboards and ceramic tiles have become increasingly popular in recent years. This trend has, however, led to an increasing number of concerns with regard to noise and disturbance to neighbours, specifically for apartments and flats.

This guide has been prepared by the Department for Environment, Food and Rural Affairs to provide advice and to highlight the potential noise issues of replacing a soft floor covering with a hard floor finish.

The following guide covers issues relating to apartments and flats, types of floor structure and good practice for terraced and semi-detached houses.

APARTMENTS & FLATS

Noise and hard floor surfaces

Research has shown that when a carpet is removed and replaced with wood or laminate flooring the noise your neighbour in the property below experiences will increase significantly.

If you live in a flat or an apartment and do not have any properties below, this will generally not cause noise issues (see best practice for installation for houses)

The removal of carpet in your home could change the noise environment in your downstairs neighbours home from relatively quiet to unbearable. This is likely to have an adverse effect on their enjoyment of their property. In some cases if the situation continues, their health and well-being may suffer. This can lead to significant distress for occupants and tension and disputes between neighbours. ***It may also result in legal action being taken against you.*** To avoid disturbing your neighbour you should install a resilient underlay under your laminate floor. Extensive use of rugs in areas of high foot traffic will help . Also wearing soft soled shoes, such as slippers, will reduce the amount of noise you generate.

Minimising noise transmission

If you are considering installing a laminate or wood finish floor you should minimise the amount of noise which could be heard by your neighbours. **The best way of doing this is by laying a resilient underlay.**

Advantages of underlays:

- *they reduce noise transmission to your neighbours*
- *they prolong the life of your laminate or wood floor*
- *they reduce noise and vibration in your own home*
- *they allow the floor to be more resilient and reduce injuries to children and the elderly when they fall*
- *they may avoid the potential for confrontation with your neighbour*

7 STEP Best Practice - for installing laminates and wood floors

STEP 1 - lay your underlay so that it lies flat and not uneven
STEP 2 - ensure the underlay edges are abutted and do not overlap as this will create an uneven surface for your laminate /wood floor
STEP 3 - lay the underlay so that it has at least 10cm extra, turned up at each perimeter wall
IF EXISTING SKIRTING NOT BEING REMOVED
STEP 4 - lay the laminate/wood floor so that it stops at least 2cm from the wall or existing skirting
STEP 5 - pull the underlay around the edge of the laminate (see over)
STEP 6 - fix a small wood channel to the base of the skirting or wall, so that the underlay passes between the floor and channel
STEP 7 - trim off the protruding underlay

IF USING NEW SKIRTINGS or REMOVING AND RE-USING OLD SKIRTINGS

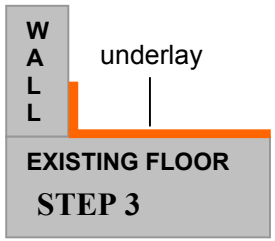
STEP 4 - lay the laminate/wood floor so that it stops at least 2cm from the wall

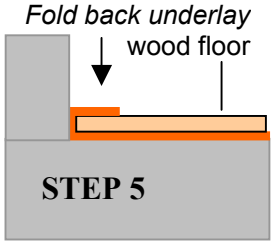
STEP 5 - pull the underlay around the edge of the laminate (see over)

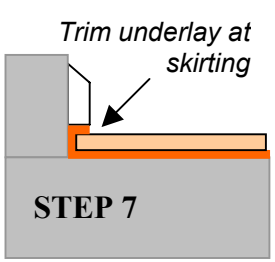
STEP 6 - fix the skirting to the wall, so that the underlay passes between the floor and skirting base

STEP 7 - trim off the protruding underlay

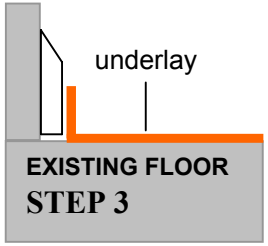
For New Skirting

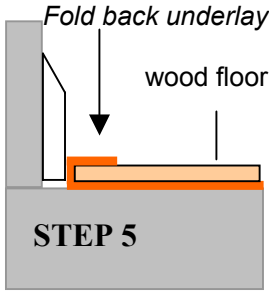


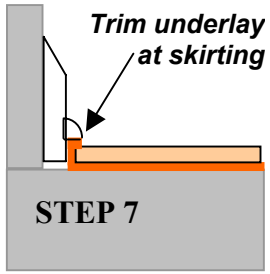


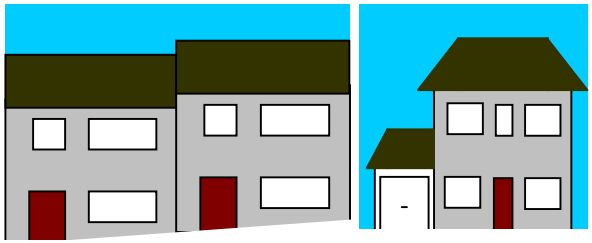


For Existing skirting









ATTACHED HOUSES HOUSES

For Attached Houses

Noise transmission can occur horizontally if wood or laminate floor finishes are able to touch the shared party wall between the houses. To reduce the possibility of complaints the 7 STEP guide should also be followed.

For Detached Houses

To reduce noise transmission within your own home using such floor finishes the 7 STEP guide should also be followed.

Renting a house or apartment

If you rent your dwelling from a Local Authority, Housing Association, Registered Social Landlord or Private Owner you should check your lease or rental agreement and contact the appropriate person to check if laminate or wood floor finish floors are permitted to be installed.

If you install such flooring without the appropriate permission you may be asked to remove it and re-install carpets at your expense.

What to do in the event of problems

By far the best way to resolve problems with noise from neighbours is through talking to your neighbours and explaining your concerns. It is more than likely that they are unaware of the problem and will be happy to discuss a solution.

Suggest that if an underlay has not been installed that the floor be lifted and one installed. An agreement to share the cost of this may help to persuade them. Alternatively laying rugs on the areas of the floor where problems are most experienced may be less costly and would be far more effective at reducing the noise level. If you are having difficulty talking to your neighbour directly, your local authority will be able to put you in touch with a free mediation service who are expert in dealing with disputes.

For further advice contact the national mediation advice line on 0845000000

Contact your local environmental health department if mediation has not been successful and you feel that the noise being experienced is above that which would normally be experienced in a flatted property.

If the problem is not satisfactorily resolved and the noise disturbance is identified as loud enough to be classified as a nuisance, you may be required to reinstate a soft floor finish.

Further information

A guide entitled "Noise control from laminated and wooden flooring " is available to down load from the Defra web site
www.defra.gov.uk/laminate

The full report prepared for Defra into the extent of problems of noise from laminate and wooden floors is available upon request from Defra.
Contact Defra Xxxx

APPENDIX C1:

STAKE-HOLDER SURVEY

The Development And Production Of A Guide For Noise Control From Laminated And Wooden Flooring

The Building Performance Centre
Napier University

DEFRA RESEARCH STUDY: 'LAMINATED AND WOODEN FLOORING: A GUIDE FOR NOISE CONTROL'

Please note this form may also be completed on-line at www.sbe.napier.ac.uk/bpc/laminate

SECTION A: Impact Noise Problems experienced with hard floor finishes

1. Please provide an indication of your professional involvement and an estimate of the number of flatted residential dwellings with which your organisation is annually responsible for, if applicable.

- ☐ Social landlord — No. Flatted Properties… ☐
- ☐ Private landlord
- ☐ Local Authority housing
- ☐ Housebuilder: Customer service
- ☐ Environmental Health Officer
- ☐ Other……

2. Of these properties, can you estimate the percentage where timber hard floor finishes have been installed:

Overall Percentage of Properties ☐ %

What is the approximate breakdown of floor types in these properties?

- ☐ % Sanded
- ☐ % Laminated
- ☐ % Wood block
- ☐ % Hardwood flooring
- ☐ % Other……..

100 % (Total)

3. Please indicate the annual number of complaints received by your organisation relating specifically to impact noise from hard floor surfaces…

Annual No. impact noise complaints ☐

and their background cause…

Complaint subsequent to the arrival of a new resident ☐ %

Complaint due to new hard floor surface installed ☐ %

Other (please specify) ☐ %……

Of these complaints, please rank the primary noise source complained of (1,2 or 3). (1= highest)

Adult footfalls ☐

Children playing ☐

The operation of domestic appliances ☐

Other (please specify) ☐

4. From your experience, please estimate for each floor component the susceptibility to impact sound problems.

	Never	Rarely	Occasionally	Often	Always
Floor Surface					
Bare Floor Boards	☐	☐	☐	☐	☐
Carpet	☐	☐	☐	☐	☐
Laminate	☐	☐	☐	☐	☐
Wood block	☐	☐	☐	☐	☐
Hardwood Flooring	☐	☐	☐	☐	☐
Other ……	☐	☐	☐	☐	☐

	Never	Rarely	Occasionally	Often	Always
Resilient Underlay					
None	☐	☐	☐	☐	☐
Thin Foam 2 mm	☐	☐	☐	☐	☐
Resilient Layer (>2 mm)	☐	☐	☐	☐	☐
Floor Substructure					
Timber	☐	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐

5. If you have been involved in cases which you feel would benefit the research project we would be grateful if you could attach details.

SECTION B: Mitigation Measures

6. Has your organisation attempted to restrict the use of laminate flooring within flatted residential properties through the use of a written clause incorporated into a tenancy agreement, deeds, condition of sale etc.

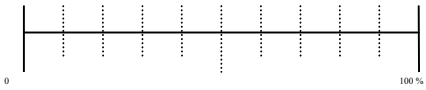
Yes	No

If Yes please attach details of the agreement clause, If No please go to question 10.

7. Is the clause only used for new residents or has it been applied retrospectively? If used retrospectively how were the changes implemented?

New	All

8. Could you estimate how successful this clause has been in discouraging the instances of hard finish floor installations:

Not Effective  *Very Effective*

9. Has the clause been enforceable in practice? If No please provide details.

Yes	No

10. Has any impact noise dispute necessitated legal recourse? If Yes please give outline details on actions and outcome.

Yes	No

11. How are noise nuisance complaints from impact noise generally assessed?

- ☐ Subjectively
- ☐ By acoustic test

12. In response to impact noise complaints, has your organisation been involved in undertaking mitigation measures?

How successful have these measures been?	Attempted	Yes			No	
		Not at all	Not very much	A little	Quite a lot	Completely
Mediation	☐	☐	☐	☐	☐	☐
Installation of soft floor finish	☐	☐	☐	☐	☐	☐
Ceiling treatment in lower property	☐	☐	☐	☐	☐	☐
Installation of resilient material under floor finish	☐	☐	☐	☐	☐	☐
Other …… ……	☐	☐	☐	☐	☐	☐

13. Which party(s) is (are) typically responsible for meeting the cost of remedial measures?

Local Authority	House builder	Lower property	Upper property
☐	☐	☐	☐

14. Please rate the determining factors governing the choice of mitigation measures undertaken? (1, 2 or 3 with 1 the highest priority)

☐ Cost

☐ Access restrictions

☐ Physical restrictions e.g. floor / ceiling heights

☐ Professional advice

☐ Other……

Thank you for taking time to complete our research survey

Questionnaire completed by:

Name:…… Tel.:……..

Organisation:…….. E_mail:……

☐ Please tick if you are willing to be contacted with regard to this study.

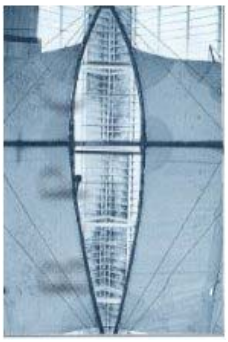
Completed forms should be returned to the Building Performance Centre, 10 Colinton Road, Edinburgh, EH10 5DT.

APPENDIX C2:

HOUSE BUILDER SURVEY

The Development And Production Of A Guide For Noise Control From Laminated And Wooden Flooring

The Building Performance Centre
Napier University



BUILDING PERFORMANCE

C E N T R E

NAPIER UNIVERSITY, 10 COLINTON ROAD, EDINBURGH, EH10 5DT
TEL 0845 062 0000 FAX 0845 062 0011 www.sbe.napier.ac.uk/bpc/laminate email: bpc@napier.ac.uk

For the attention of house builders' customer services department.

Defra Research Study: Questionnaire
'Laminated And Wooden Flooring: A Guide For Noise Control'

We would be grateful if the following questions could be completed and faxed back to the Building Performance Centre on 0845 062 0011.

For residential flatted developments…

1. Do you offer laminate or hardwood flooring within your properties? Yes / No

   If Yes, please indicate the overall % of houses in which it is installed. _____%

   Is an acoustic underlay always installed under laminate or hardwood flooring? Yes / No

2. If house buyers are installing a hard floor surface after sale, do you provide advice on the use of acoustic underlays under laminate or hardwood finishes? Yes / No

3. Have you ever used a condition of sale clause to restrict the use of laminate or hardwood finishes? Yes / No

   If Yes, please attach a copy of wording used.

4. Have you received complaints from customers concerning the use of hard floor finishes by their neighbours? Yes / No
   If Yes, please indicate number annually. _____.

5. If complaints have been received, please indicate the approximate percentage of core floor structures that are timber (e.g. joist) or concrete (e.g. slabs, beam & block). Timber _____%
   Concrete _____%

Name:

……...

Company Name:

……...

Tel No:

……

APPENDIX D:

CIEH NOISE COMPLAINT CATEGORIES

The Development And Production Of A Guide For Noise Control From Laminated And Wooden Flooring

The Building Performance Centre
Napier University

APPENDIX D

CIEH Noise Complaint Categories

Heavy industrial
Light industrial
Agricultural
Commercial
Sports & leisure
Security alarm
DIY (LA)
DIY (Private)
Neighbours (LA)
Neighbours (Private)
Parties (LA)
Parties (Private)
Music (LA)
Music (Private)
Barking dog (LA)
Barking dog (Private)
House alarm (LA)
House alarm (Private)
Construction works
Vehicle alarm
Vehicle - car music
Vehicle – Refrigeration plant
Loud speakers
Roadworks
Buskers
Aircraft
Railways