



## Response to the Consultation on pr CEN124

### Federation of European Motorcyclists Associations (FEMA)

30 October 2007

*This response is submitted by the Federation of European Motorcyclists' Associations (FEMA) and has been written in conjunction with the motorcycle stakeholders grouping in the UK.*

To Whom it may concern

A common factor regarding concerns of motorcyclists across Europe is that Manhole (inspection) covers present a significant road safety hazard to users.

We hope you will share our view that amending the proposed standard to require the use of covers with acceptable in-service skid/slip resistance is absolutely necessary and that it could make a lasting difference to road safety for vulnerable road users.

We wish to underline our trust in your work and thank you in advance for taking our remarks into considerations.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Aline Delhay', is written over a faint blue rectangular box.

Aline Delhay  
General Secretary  
Federation of European Motorcycle Associations

## Road infrastructure in context regarding Manhole (Inspection) Covers

Although the purpose of the consultation for motorcycles is primarily focused on the issue of minimum grip levels in use for manhole covers FEMA feels that the road infrastructure should be put into context as background regarding manhole covers. This includes design, fitting, positioning, construction and maintenance of the road infrastructure.<sup>1</sup>

The road network of today is basically conceived for cars, buses and commercial vehicles. Shaping it according to the needs of motorcyclists would not require a huge investment.

It should be pointed out however, that *cast metal sewage covers*, potholes, road humps as well as rain grooves and tram rails can be dangerous for motorcyclists.

Metal road surface components such as manhole covers, tramlines etc offer almost no traction, especially when wet. Metal road surface components should be positioned outside the road or the line taken by single-track vehicles.

The European Parliament's 2005 report on road safety commented that '*Infrastructure in particular, must be thought and developed considering the needs of all road users including the more vulnerable ones namely motorcyclists, cyclists and pedestrians. Roads should be upgraded to accommodate the current traffic levels. Driver errors can be avoided and their consequences mitigated by means of a systematic inclusion of road safety issues at any stage of the design, construction and operation of roads*'. The European Parliament also commented that "*Roads should be built according to standards which take into account the needs of all road users.*" The EU Parliament also recognised that driver errors could be avoided and their consequences mitigated by means of a systematic inclusion of road safety issues at any stage of the design, construction and operation of roads.

The European Parliament also supports the view that "*Roads should be built according to standards which take into account the needs of all road users*" and called on the Commission to "*promote best practices for road construction and maintenance and to encourage the use of motorcycle friendly protective barrier and promote the regular updating of CEN standards*"

Infrastructure requirements for motorcycles would not lead to a substantial increase in public expenditure. It could however make a sizeable contribution to the sustainability of urban traffic.

## Manhole (Inspection) Covers

By design single track vehicles such as motorcycles, have a very small contact patch with the road surface. The availability of grip from the road surface is crucial to remaining stable and upright, with a consistent, preferably high, level of grip being required to allow the motorcyclists to predict the correct line for negotiating a corner.

The current European Standard on manhole covers, EN 124, does not specify minimum grip levels in use. The covers are designed for durability in terms of mechanical stability, i.e., they do not break, deform, or displace, not for adequate and sustained levels of skid resistance. Where grip is required, the standard recommends a texture be applied to the cover. However, in use, the skid resistance of many covers deteriorates rapidly as they become polished by passing traffic. This results in a cover with poor skid resistance compared to the surrounding highway.

For motorcyclists and certain other road user groups including pedestrians and horse riders, this sudden change in grip can be the direct cause of injury or death. Covers with good skid resistance potential



<sup>1</sup> A European Agenda for Motorcycle Safety -The Motorcyclists' Point of View - <http://www.fema.ridersrights.org/docs/EAMS2007.pdf>

do exist but are not widely used, at least in part because the existing standard can be used to justify their rejection.

FEMA believes that the surface of the highway should not present avoidable hazards to motorcyclists. The hazards presented by slippery manhole (inspection) covers are entirely avoidable. The use of covers with acceptable in-service skid/slip resistance could be mandated by the European Standard as a contribution to the EU commitment to reducing road casualties.

The proposed standard does not offer a solution to this road safety challenge. FEMA believes the opportunity should be taken to amend the draft revised standard in order to require that information on the slip/skid resistance that can be expected of the product in service must be provided.

FEMA has particular concerns about the declaration that cast-iron covers meeting the present EN 124 standard are "satisfactory." This is unfortunately not the case and, if allowed to stand, will compromise road safety.

With regards to the suggestion that a cover would be "satisfactory" with "a defined raised pattern", we propose that this wording be deleted and replaced with a requirement to measure the Polished Skid Resistance Value (PSRV) of the product. The PSRV should be linked to the appropriate investigatory level for the site.

As safety of the product in service is of paramount importance, information about the slip/skid resistance that can be expected of the product *in service* is essential. The draft revised EN 124 standard, in its current form, will not remedy the potential hazard presented by polished manhole covers as it does not address "in use" conditions.

The draft should be amended to require a measurement of the level of in service skid/slip resistance that can be expected of the product in service, using a suitable test method which will replicate the level of polishing found in service.

Detailed comments using the requested template format are appended at the end of this document.

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## The Federation of European Motorcyclists' Associations (FEMA)

The Federation of European Motorcyclists' Associations (FEMA) is the representative federation of motorcycle (comprising all powered two-wheeled vehicles) users throughout Europe.

FEMA represents the interests of citizens' national organisations at the European Union and agencies of the United Nations. FEMA's primary objective is to pursue, promote and protect the interests of motorcyclists.

FEMA recognises that motorcycles have different characteristics from other vehicles and emphasises the need for motorcyclists' specific requirements to be addressed.

The FEMA secretariat is based in Brussels, in the heart of the European Union. It employs three full time members of staff dedicated to safeguarding the interests of riders. Within the framework of FEMA, experience based knowledge of motorcycle safety is continually improved and disseminated.



FEMA represents 24 national riders' rights organisations from 19 countries across Europe.

## ANNEX 1

FEMA asked its Member Organisations to respond to the two statements below by answering whether there were true or false for their country.

### Statement 1

In the UK the vast majority of covers in the carriageway (road) are "cast iron". Accident investigation, skid/slip resistance measurements and concerns expressed by highway users and in particular motorcyclists, cyclists & horse riders have shown that the significant majority of these covers, in use, are very far from "satisfactory". Even when the covers have the pattern of the type described in this clause are considered to have unsatisfactory skid/slip potential.

Responses received.

MAG Austria: True  
MAG Belgium: True  
BU – Germany: True  
MOTOE – Greece: True  
MAG Ireland: True  
MAG NL – Netherlands: True  
NMCU – Norway: True  
SMC – Sweden: True  
EMOK – Turkey: True  
BMF UK: True  
MAG UK: True

### Statement 2

Some concrete mixes can become slippery in use. This can arise as a direct result of the polishing action of pedestrian or vehicular traffic. This problem in the UK has been identified when acid soluble, e.g., limestone aggregates have been used & particularly when the fine aggregate is composed of such material. The problem can occur even when the top surface has not been ground or polished as a deliberate part of the manufacturing process. (Respond true or false)

Responses received.

MAG Austria: True  
MAG Belgium: True  
BU – Germany: True  
MOTOE – Greece: True  
MAG Ireland: True  
MAG NL – Netherlands: True  
NMCU – Norway: True  
SMC – Sweden: True  
EMOK – Turkey - We do not have concrete mix covers in Turkey.  
BMF UK: True  
MAG UK: True

## Annex 2

### **Anecdotal evidence of the effects current un-surfaced manhole cover design has on PTW users.**

#### **Sample from a total figure of 40 Riders**

This evidence was collected by members of FEMAs National Organisation MAG UK for a research brief for the study of the physical properties, positioning and effects of service access covers employed in the highway surface on powered two wheel vehicles (PTW).

#### **Rider 1 - Female**

When negotiating an unavoidable manhole in the wet, tyres lose their grip and force the machine to slide some inches across the obstacle. If they are avoidable - space and other road traffic allowing - the rider is forced off line - not advisable even for the experienced rider as this leads to instability of the machine. No one manhole is dangerous - they all are - for anyone on two wheels.

#### **Rider 2 - Male**

I have suffered numerous incidences of being unnerved by these things during my motorcycling career. Although I cannot recall a time when I have actually come to grief and fallen off my bike as a result of riding over one, I am sure that this is down to a mixture of effective observation, experience and good luck.

When riding a motorcycle, especially in the wet or frosty conditions one has to constantly watch for manhole covers as being caught off guard by one causes the wheel in contact with the cover to lose grip dramatically with frightening consequences. This means that motorcyclists often have to take avoiding action and alter their normal line of riding on the road, which in turn has brought me into conflict with other road users who often do not appreciate the hazard.

#### **Rider 3 - Male**

This manhole is situated in the middle of the road, on a sharp bend near where the school has since been built. With the school has come traffic calming measures, however at the time none of that existed and I came round the corner on a bright, sunny but damp day and the front wheel of my motorcycle lost grip on the manhole. I slid up the road and collided with an oncoming car. Fortunately neither of us were travelling all that fast, so the damage was slight, however it only occurred because the manhole was there.

#### **Rider 4 - Male**

Through my years of riding motorcycles I have learnt that manhole covers can pose a very real danger. Whilst I myself have never actually crashed due to manhole covers I have had enough near misses to treat manhole covers with respect. The combination of manhole covers and weather on several occasions has caused me to temporarily lose control of my motorcycle. These metal covers in the wet offer little in the way of traction and have caused various slides. Manhole covers pose the greatest threat on roundabouts and corners when the motorcycle is leant over for steering. Having had numerous bad slides on these manhole covers means that I have to devote a fair amount of my time whilst riding to checking the road surface which prevents me from being able to concentrate on other road going traffic pedestrians and other such like hazards. Manhole covers can also pose a threat in that they are not always level with the surrounding road surface which is a hazard whilst braking in that it can cause the tyres to lose contact with the road and extends braking distances.

#### **Rider 5 - Male**

It is not just manhole covers that pose a very great, if not at times lethal threat to motorcycles but any steel plate in the road. As a regular user of the Cumberland basin, this road has steel expansion plates running across the full width of the road which gives absolutely no chance of avoiding them. This has given me some very frightening and dangerous moments as loss of grip can result at 15 MPH let alone the posted 40MPH. These plates and manhole covers alike, can also become invisible if the weather brightens into sunshine after a rain shower, as the glare from the remaining surface water hides them

from sight. Then it becomes impossible to see them and to attempt the usual action of altering your line of travel, however unnerving that may be, in order to avoid riding over them no longer becomes an option. Manhole covers are very scary and downright dangerous.

#### **Rider 6 - Male**

I once lost the front wheel on a manhole cover slap bang in the middle of an unfamiliar T-junction. Stayed upright – just in front of my parents, to my embarrassment. And a couple of years ago, I came off on a manhole cover. Again, it was in the middle of the road on a bend. It was dark, it was raining, and I didn't spot it till it was too late.

#### **Rider 7 - Female**

I am a fairly new rider, having passed my test in 1997 and in the time that I have been riding, I have become increasingly aware of the dangers that manhole covers present. The first thing I observed is how many there seem to be in the road, fitted centrally to avoid car tyres, but perfect for a motor-cyclist to hit every single one. This is not good, when 2 wheels are already a lot less stable than 4. The next thing I noticed is how "invisible" they seem. A lot of them could be avoided if we could only see them! (Perhaps a nice fluorescent yellow or orange?) Finally, there are some covers that are so hazardous, that there is no way to avoid them, and with the positioning, the dips are very bumpy, and in wet weather also, the surfaces of many of them seem very slippery. With all this in mind, I am now very wary of travelling in wet weather on a bike, because on several occasions I have slipped on some of these covers in my normal day to day routes.

#### **Rider 8 - Female**

From personal experience, I find manhole covers to be one of the top dangers on the roads today. They turn riding a motorcycle in the wet into some kind of barbaric game – if you spot them in time you try your best to alter your riding line and avoid going over them, but this in itself can cause a second set of dangers – losing your riding line; facing oncoming vehicles; looking closely at walls and hedges; handlebar wobble. And that's if you avoid them! Should you actually be unfortunate enough to ride over one when wet (they are still a danger dry - a lot of them are not level with the main surface of the road. In summary then, manhole covers, when wet, are very dangerous obstacles to a motorcyclist – to avoid them you have to swerve out of your riding line, which can cause confusion to other road users if not make you an obstacle to them and if you are forced to ride over one, you can expect at best to lose some control of your 'bike. I understand that manhole covers conform to the British Standard but wonder if it might be time for a review of those standards. At the very least they should be made highly visible and a non-slip cover made available, if at all possible.

#### **Rider 9 - Male**

Being an ex-traffic policeman Accident causes are recorded in the accident book when initially recording the accident. If loss of control was due to a manhole cover then it would be recorded by the officer investigating. What has happened is that the local council who collect the statistics have not got a little box for manhole cover on the form so it doesn't get recorded. You need to speak to senior officers on a traffic department who I think would only be too happy for you to conduct a survey amongst their officers who attend serious motorcycle accidents.

#### **Rider 10 - Male**

Among the large number of other hazards that I have pointed out are manhole covers, their truly appalling condition in many cases, miserably low standard of maintenance, and dreadfully thoughtless siting. Apart from your totally correct corroboration of everything I have been saying for years, I have also raised the problem of countersunk covers. These fill with water and stay wet, and thus grip-free, for a very long time, quite apart from the other obvious danger of a built-in pot-hole. In extreme weather the water freezes and can cause a serious accident that will be recorded as the rider's fault. As you also correctly point out, the effect of this is much worse on scooters and for learner riders, who are already vulnerable enough thanks.

### **Rider 11 - Male**

A wet unsurfaced manhole cover has the same affect as black ice on the road holding properties of a motorcycle ,which can render the rider with broken bones or worse !! , the after affects of a RTA will cost the rider lost revenue in earnings ,so the effects could be the loss of his home,and job,especialy if they are a courier like me. Also it will cost the government money by having to treat the rider in hospital, if only a little time and effort was spent on the correct covering and placement of manhole covers ,a lot of time, money ,and pain and suffering could be saved

### **Rider 12 - Male**

Just to echo your point about manhole covers being dangerous. They are like riding over ice especially when they have been worn smooth over time. The real problem comes when cornering (especially in the wet) and trying to avoid them. If you hit one, the bike slides sideways before regaining its grip with a jolt. The same goes for braking. Why is the safety of bike riders not taken seriously? Don't highways departments/planners realise that covers and potholes are lethal to motorcyclists? I have had several serious near misses.

### **Rider 13 - Male**

I am a motorbike rider but I also need to use a car for work. The issue of unsurfaced manhole covers is not just an issue for 2 wheeled vehicles. There is an unsurfaced manhole cover just down the road from me. It is a particularly large manhole cover on a left hand bend going down a hill. This manhole cover makes my car slid sideways when descending the hill. When you view other motorists in front of you, you can view similar behaviour occurring with their vehicle. Whilst this campaign is primarily focussed on 2 wheeled vehicle users, it should also be made clear that unsurfaced manhole covers (particularly on bends or roundabouts) is a hazard to all road users.

### **Rider 14 – Female**

I am not writing regarding the problem to motorcycles of manhole covers on the roads, but to say that motorcycles are not the only road users affected. I regularly ride horses on the roads and the metal manhole covers are a liability to horses if they happen to step on one due to their metal shoes. Many a time whilst being harassed by a driver I have had to ride over a manhole cover and had the horse slip. Potentially a horse could injure itself significantly slipping on one of these resulting in huge vets bills or being destroyed. In order to build further argument for your campaign to have manhole covers covered in a non-slip material you will probably find support with the horse societies. Most of these societies are continually campaigning to make roads safer for horse-riders and this fits that campaign.

**Template for comments and secretariat observations**

Date: 30 October 2007	Document: <b>Draft prEN 124 REV</b>
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1	2	(3)	4	5	(6)	(7)
MB <sup>1</sup>	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/N ote (e.g. Table 1)	Type of comment <sup>2</sup>	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	7.13.1	General	te	The issue of 'in service' slip/skid resistance is of the utmost importance. Manufactures should carry out and provide Polished Slip Resistance Value (PSRV) tests	Change to" for all classes of products (and all places of installation) information on the 'in service' slip/skid resistance (PSRV) that can be expected of the product shall be provided	

<p>GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO</p>	<p>7.13..2</p>	<p>Slip/skid resistance of covers 1<sup>st</sup> Para a) &amp; b)</p>	<p>te</p>	<p>The UK Governments motorcycling strategy raised concern over the use of covers with ‘inadequate skid resistance’ and ‘vulnerable’ road users pedestrian, cyclist, horse riders and motorcyclists continue to raise concerns over the lack of skid resistance of such covers. Even where such covers have a pattern of the type described the performance of such covers could be described as anything BUT ‘satisfactory’ A number of trial ‘anti-skid’ covers are in use in the UK and have been tested ‘in-service’ and show high levels of skid resistance We believe the statement that such covers can be declared ‘satisfactory’ to be ‘incorrect’ and misleading, however if the manufactures truly believe that such existing products are indeed ‘satisfactory’ then they should have no problem assessing such products ‘in-service’ (PSRV) and declaring the results.</p>	<p>Change to “The skid resistance of covers shall be quantified in terms of their in-service skid/slip potential measured in accordance with the defined PSRV test</p>	
<p>GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO</p>	<p>7.13.2</p>	<p>Note</p>	<p>te</p>	<p>See above</p>	<p>Remove</p>	

GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	7.13.3	Skid/slip resistance of gratings	te	See comment for clause no 7.13.2	Amend (or remove?) in light of comments above	
GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	Table A3	7.13	te	See comment for clause 7.13.2 above In our opinion height of pattern does not adequately constitute an adequate measure of the products skid/slip resistance	Replace with a requirement to measure the Polished Skid Resistance Value (PSRV) of the product	

GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	Annex J	J6 Note	te	In our opinion URSV will not give an adequate indication of the likely 'in service' value that the product will have several years into service .A more appropriate test would be for Polished Skid Resistance Value (PSRV)	Add a suitable test method that includes a method of replicating the level of polishing found 'in service' (As per bs9124:2008) and declare the PSRV	
GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	Annex J		te	As, in our opinion URSV is not an adequate measurement in this instance we suggest that this is replace by a test to determine PSRV	Replace annex J to reflect details of suitable PSRV test	

GB, FI, SE, NL, BE, AT, FR, IT, ES, PT, DE, CZ, IE, GR, TR, CH, LU, DK, NO	Annex ZA	Scope and relevant characteristics	te	<p>This annex (J) relates to fitness for use and states “...Compliance with these clauses confers a presumption of fitness of the construction products covered by this annex for their intended uses..”</p> <p>We believe that significant concerns exist over the declaration as “satisfactory” nature of existing materials used for such products and the adequacy of the testing for skid/slip resistance</p>	<p>This statement would only be acceptable if test to adequate PSRV were included in the standard.</p>	
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