

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 1.2008.0185/VIG	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/ES2007/000707	International filing date ( <i>day/month/year</i> ) 03 December 2007 (03.12.2007)	Priority date ( <i>day/month/year</i> )	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant PUENTES Y CALZADAS GRUPO DE EMPRESAS, S.A.			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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	Date of issuance of this report 15 June 2010 (15.06.2010)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  <b>Simin Baharlou</b>
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**PATENT COOPERATION TREATY**

**TRANSLATION**

From the  
INTERNATIONAL SEARCHING AUTHORITY

**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **19.08.2008**

Applicant's or agent's file reference <b>1.2008.0185/VIG</b>		<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/ES2007/000707</b>	International filing date (day/month/year) <b>03.12.2007</b>	Priority date (day/month/year)
International Patent Classification (IPC) or both national classification and IPC <b>E04B5/14 E04B5/19 E04G11/44 E04C5/065</b>		
Applicant <b>PUNTES Y CALZADAS GRUPO DE EMPRESAS, S.A.</b>		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ES	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

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Box No. I	Basis of this opinion
1.	<p>With regard to the <b>language</b>, this opinion has been established on the basis of:</p> <p><input checked="" type="checkbox"/> the international application in the language in which it was filed</p> <p><input type="checkbox"/> a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).</p>
2.	<p><input type="checkbox"/> This opinion has been established taking into account the <b>rectification of an obvious mistake</b> authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))</p>
3.	<p>With regard to any <b>nucleotide and/or amino acid sequence</b> disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> on paper</p> <p><input type="checkbox"/> in electronic form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed</p> <p><input type="checkbox"/> filed together with the international application in electronic form</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search</p>
4.	<p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>
5.	<p>Additional comments:</p>

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<b>Box No. V</b>	<b>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>																		
1. Statement																			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 2px;">Novelty (N)</td> <td style="padding: 2px;">Claims <u>2, 3</u></td> <td style="width: 10%; text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims <u>1</u></td> <td style="text-align: right; padding: 2px;">NO</td> </tr> <tr> <td style="padding: 2px;">Inventive step (IS)</td> <td style="padding: 2px;">Claims _____</td> <td style="text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims <u>1-3</u></td> <td style="text-align: right; padding: 2px;">NO</td> </tr> <tr> <td style="padding: 2px;">Industrial applicability (IA)</td> <td style="padding: 2px;">Claims <u>1-3</u></td> <td style="text-align: right; padding: 2px;">YES</td> </tr> <tr> <td></td> <td style="padding: 2px;">Claims _____</td> <td style="text-align: right; padding: 2px;">NO</td> </tr> </table>	Novelty (N)	Claims <u>2, 3</u>	YES		Claims <u>1</u>	NO	Inventive step (IS)	Claims _____	YES		Claims <u>1-3</u>	NO	Industrial applicability (IA)	Claims <u>1-3</u>	YES		Claims _____	NO	
Novelty (N)	Claims <u>2, 3</u>	YES																	
	Claims <u>1</u>	NO																	
Inventive step (IS)	Claims _____	YES																	
	Claims <u>1-3</u>	NO																	
Industrial applicability (IA)	Claims <u>1-3</u>	YES																	
	Claims _____	NO																	
2. Citations and explanations:																			
<p>Documents taken into consideration:</p> <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 10%; padding: 2px;">D1</td> <td style="width: 50%; padding: 2px;">ES 458032</td> <td style="width: 40%; padding: 2px;">16 March 1978</td> </tr> <tr> <td style="padding: 2px;">D2</td> <td style="padding: 2px;">ES 171669 U</td> <td style="padding: 2px;">25 November 1972</td> </tr> <tr> <td style="padding: 2px;">D3</td> <td style="padding: 2px;">ES 2089947</td> <td style="padding: 2px;">1 October 1996</td> </tr> <tr> <td style="padding: 2px;">D4</td> <td style="padding: 2px;">ES 201651 U</td> <td style="padding: 2px;">25 April 1974</td> </tr> </table> <p style="margin-top: 20px;">The present invention describes a prefabricated structural system for constructing two-way or waffle slabs based on the use of prefabricated concrete slabs which incorporate longitudinal bottom reinforcements, lightening elements and concrete which is poured thereon so as to form the compression layer and the structural ribs. The slabs may be of two types: one type which incorporates triangular-shaped metal reinforcing lattices which are complemented with the transverse ribs reinforced <i>in situ</i>, and another type which includes one or more central ribs with openings provided for receiving the transverse reinforcement.</p> <p style="margin-top: 20px;">The closest prior art document is document D1 since it also describes a waffle slab composed of prefabricated concrete slabs with a bottom longitudinal reinforcement,</p>		D1	ES 458032	16 March 1978	D2	ES 171669 U	25 November 1972	D3	ES 2089947	1 October 1996	D4	ES 201651 U	25 April 1974						
D1	ES 458032	16 March 1978																	
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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

on which plates are placed the hollow recessed elements, which have the same technical function as the lightening elements of the present invention, together with the entire assembly filled with concrete *in situ*, in order to form the compression layer and the structural ribs. Therefore, in the light of document D1, which has elements which perform the same technical function described in the present invention, a person skilled in the art could conclude that claim 1 lacks inventive step.

Document D1 also mentions the possibility that the slabs may incorporate triangular-shaped metal lattices which when installed on-site are complemented with the transverse ribs arranged *in situ*, in the same way as described in claim 2. Therefore, since claim 2 is dependent on claim 1, it may be stated that it also lacks inventive step.

D1 does not mention that the slabs may include central ribs with openings for receiving the transverse reinforcement, but this practice is mentioned in various documents of the closest prior art, such as document D2; as a result a person skilled in the art, in the light of both documents, could combine same in order to arrive at the same technical solution contained in the present invention. Therefore claim 3, in the light of both documents, lacks inventive step.

Document D3 also includes the same technical features described in claim 1 with the result that, in the light of this document, it may be stated that claim 1 lacks novelty. Thus document D3 mentions the possibility that

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

the slabs may incorporate triangular-shaped metal lattices, but this document does not mention that these, when installed on-site, should be complemented with reinforced transverse ribs arranged *in situ* or the possibility that the central ribs may include openings for receiving the transverse reinforcement; however, since the latter is a customary practice in the prior art, a person skilled in the art, in the light of documents D3 and D4, would arrive at the same technical solution contained in the present invention. Consequently it may be stated that claim 3 lacks inventive step.