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### **In situ evaluation of the vibration reduction index $K_{ij}$**

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As stated in EN 12354-1 and 2 Standards the vibration reduction index  $K_{ij}$  is a quantity related to the vibrational power transmission over a junction between structural elements, normalized in order to make it invariant. This quantity allows to quantify the flanking transmission both in air-borne and impact sound insulation between rooms. It is important to underline that the measurement method reported in the EN 10848-1 Standard is only referred to the laboratory measurement, anyway in the Annex E of the EN 12354-1 Standard is indicated that the same methodology is probably useable also in in situ condition. In this work several measurements of the vibration reduction index in situ are reported in order to verify if the methodology is also suitable in uncontrolled conditions as in the field. The measured results are compared with the previsional model results according to the EN 12354-1. In particular the case studies are the T-junctions and the cross-junctions between the ceilings and the vertical walls in some typical rooms in dwellings. From the first experimental results some peculiar building features, influencing the measurement and the calculation data, have been evidenced, especially with reference to the south European building typologies in brick and concrete.