Draft

Protocol on cluster munitions

Submitted by the Chairperson

The High Contracting Parties,

Determined to address urgently the humanitarian impact caused by cluster munitions,

Desiring to protect civilians from the indiscriminate effects of weapons,

Basing themselves on the principles and rules of International Humanitarian Law,

Recognising that the right of parties to an armed conflict to choose methods or means of warfare is not unlimited;

Resolved to do their utmost in providing assistance to the victims of cluster munitions, who include persons who have been killed or suffered physical or psychological injury, economic loss, social marginalisation or substantial impairment of the realisation of their rights caused by the use of cluster munitions, as well as their affected families and communities,

Have agreed as follows:

Article 1

General provision and scope of application

1. In conformity with the Charter of the United Nations, the rules of International Humanitarian Law and other rules of international law applicable to them, the High Contracting Parties agree to:

(a) comply with the obligations specified in this Protocol, both individually and in cooperation with other High Contracting Parties, to address the humanitarian impact caused by cluster munitions;

(b) take all necessary and feasible measures to prevent and alleviate human suffering caused by cluster munitions.
2. This Protocol shall apply to situations of conflict, and situations resulting from conflicts referred to in Article 1, paragraphs 1 to 6, of the Convention, as amended on 21 December 2001.

3. This Protocol shall not affect any rights or obligations that States Parties to the Convention on Cluster Munitions, done at Dublin, Ireland, on 30 May 2008, have under that Convention.

4. This Protocol shall not apply to mines, booby-traps and other devices as defined in Article 2 of the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, as amended on 3 May 1996, annexed to this Convention.

5. This Protocol shall not apply to the munitions described in Technical Annex A.

6. The application of the provisions of this Protocol to parties to an armed conflict, which are not High Contracting Parties that have accepted this Protocol, shall not change their legal status or the legal status of a disputed territory, either explicitly or implicitly.

Article 2
Definitions
For the purposes of this protocol:

1. ‘Cluster munition’ means
   (a) a conventional munition that is designed to disperse or release explosive submunitions, and includes those explosive submunitions; or
   (b) a munition consisting of a container, affixed to an aircraft, which is designed to disperse or release multiple explosive submunitions, other than self-propelled explosive submunitions, and includes those explosive submunitions.

2. ‘Explosive submunition’ means a conventional munition, weighing less than 20 kilograms, that in order to perform its task is dispersed or released by a cluster munition and is designed to function by detonating an explosive charge prior to, on or after impact.

3. ‘Failed cluster munition’ means a cluster munition that has been fired, dropped, launched, projected or otherwise delivered during an armed conflict, and which should have dispersed or released its explosive submunitions but did not do so as intended.

4. ‘Unexploded submunition’ means an explosive submunition which has been dispersed or released by, or otherwise separated from, a cluster munition during an armed conflict and has failed to explode as intended.

5. ‘Abandoned cluster munitions’ means cluster munitions or explosive submunitions that have not been used during an armed conflict, that have been left behind or dumped by a party to an armed conflict or in a situation arising directly from an armed conflict, and that are no longer under the control of the party that left them behind or dumped them. They may or may not have been prepared for use.

6. ‘Cluster munition remnants’ means failed cluster munitions, abandoned cluster munitions and unexploded submunitions.

7. ‘Transfer’ involves, in addition to the physical movement of cluster munitions into or from national territory, the transfer of title to and control over the cluster munitions, but does not involve the transfer of territory containing cluster munition remnants.

8. ‘Self-destruction mechanism’ means an incorporated or attached automatically-functioning mechanism, which secures the destruction of the munition into which it is incorporated or to which it is attached.
9. ‘Self-neutralization mechanism’ means an incorporated automatically-functioning mechanism which renders inoperable the munition into which it is incorporated.

10. ‘Self-deactivating’ means automatically rendering a munition inoperable by means of the irreversible exhaustion of a component, for example, a battery, that is essential to the operation of the munition.

11. ‘Cluster munition contaminated area’ means an area known or suspected to contain cluster munition remnants.

**Article 3**

**International Humanitarian Law**

1. In implementing this Protocol, each High Contracting Party and party to an armed conflict shall ensure full compliance with all applicable principles and rules of International Humanitarian Law.

2. Nothing in this Protocol shall be interpreted as detracting from, or otherwise prejudicing, other applicable principles and rules of international humanitarian law.

**Article 4**

**General prohibitions on cluster munitions produced before 1 January 1980**

1. It is prohibited for a High Contracting Party to use, acquire, stockpile or retain cluster munitions produced before 1 January 1980.

2. This Article does not apply to cluster munitions that are acquired or retained in a limited number for the exclusive purpose of training in detection, clearance and destruction techniques, or for the development of cluster munitions countermeasures. The number retained should be the minimum necessary for such purposes.

3. The prohibition on stockpiling and retention of cluster munitions in paragraph 1 of this Article shall not apply to cluster munitions removed from operational stocks for their subsequent destruction in accordance with Article 6.

**Article 5**

**General prohibitions and restrictions on cluster munitions produced on or after 1 January 1980**

1. It is prohibited for a High Contracting Party to use, acquire, stockpile or retain cluster munitions produced on or after 1 January 1980, other than those described in Technical Annex B.

2. It is prohibited for a High Contracting Party to produce or develop cluster munitions other than those described in Technical Annex B.

3. In the event that a High Contracting Party determines that it cannot immediately comply with paragraph 1 of this Article it may declare at the time of its notification of consent to be bound by this Protocol that it will defer compliance with the prohibition of use, stockpiling and retention for a period not exceeding eight years from the entry into force of this Protocol. In case a High Contracting Party is unable to comply with paragraph 1 of this Article within the period it announced by declaration, it may notify the Depositary that it will extend this period of deferred compliance for up to four additional years. The Depositary shall circulate declarations and notifications referred to in this paragraph to all High Contracting Parties.

4. During a period of deferred compliance pursuant to paragraph 3 of this Article, a High Contracting Party shall only use cluster munitions, other than those described in
Technical Annex B, after approval by its highest-ranking operational commander in the area of operations or by the appropriate politically mandated operational authority.

5. Upon entry into force of this Protocol, each High Contracting Party that retains cluster munitions shall:

   (a) take steps in any design, procurement, or production of cluster munitions, to incorporate additional safeguard mechanisms or designs, or otherwise minimize the unexploded ordnance rate;

   (b) improve to the extent possible the accuracy of their cluster munitions and explosive submunitions described in Technical Annex B;

   (c) review the military necessity to retain cluster munitions and as soon as possible remove excess cluster munitions from operational stockpiles and designate these stocks for destruction; and

   (d) use only cluster munitions with the lowest possible unexploded ordnance rate, consistent with military requirements.

6. It is prohibited to use munitions described in paragraphs 2, 3 and 4 of Technical Annex B other than for the purpose for which each was exclusively designed.

7. This Article does not apply to cluster munitions acquired or retained in a limited number for the exclusive purpose of training in detection, clearance, and destruction techniques, or for the development of cluster munitions countermeasures. The number retained should be the minimum necessary for such purposes.

8. The prohibition on stockpiling and retention of cluster munitions in paragraph 1 of this Article shall not apply to cluster munitions removed from operational stocks for their subsequent destruction in accordance with Article 6.

Article 6
Storage and destruction of cluster munitions

1. Each High Contracting Party that retains cluster munitions shall:

   (a) remove all cluster munitions prohibited by this Protocol that are under its jurisdiction and control from its operational stocks, separate them from munitions retained for operational use, and in accordance with national procedures mark and safely secure them:

      (i) for those cluster munitions referred to in paragraph 1 of Article 4 – on entry into force of the Protocol for it; and

      (ii) for those cluster munitions referred to in paragraph 1 of Article 5 – on entry into force of the Protocol for it or at the end of any period of deferred compliance pursuant to paragraph 3 of Article 5;

   (b) destroy or ensure the destruction, in accordance with national procedures, of all cluster munitions prohibited by this Protocol that are under its jurisdiction and control as soon as feasible, starting no later than:

      (i) for those cluster munitions referred to in paragraph 1 of Article 4 – the entry into force of the Protocol for it; and

      (ii) for those cluster munitions referred to in paragraph 1 of Article 5 – the entry into force of the Protocol for it or at the end of any period of deferred compliance pursuant to paragraph 3 of Article 5; and
(c) create and maintain a stockpile surveillance and management programme in accordance with national procedures to ensure the safety and reliability of cluster munitions not prohibited by this Protocol. In implementing this provision, the High Contracting Parties shall make use of, where appropriate, existing mechanisms, tools, and databases within the framework of the Convention and other relevant instruments and mechanisms.

2. A High Contracting Party that has cluster munitions prohibited by this Protocol under its jurisdiction and control shall develop a comprehensive plan, in accordance with national procedures, for the destruction, after the expiration of any applicable period of deferred compliance, of all such cluster munitions. The comprehensive plan shall include a schedule and the time required for completion of destruction. The High Contracting Party shall revise the comprehensive plan as necessary.

Article 7
Prohibitions and restrictions on the transfer of cluster munitions

1. It is prohibited for a High Contracting Party to transfer any cluster munitions produced before 1 January 1980.

2. It is prohibited for a High Contracting Party to transfer any cluster munitions produced between 1 January 1980 and 1 January 1990, other than those described in Technical Annex B where that transfer is pursuant to security cooperation agreements or arrangements existing at the time of the entry into force of this Protocol.

3. It is prohibited for a High Contracting Party to transfer any cluster munitions produced on or after 1 January 1990, other than those described in Technical Annex B.

4. Upon entry into force of this Protocol, each High Contracting Party shall:

   (a) not transfer any cluster munition that diverges substantially from its design specification;

   (b) not transfer any cluster munition that has been designated for destruction, except for the purposes of destruction pursuant to paragraph 5 of this Article;

   (c) not transfer any cluster munition or submunition to any recipient other than a State or State agency authorized to receive such transfer;

   (d) prevent unauthorised transfers, from areas under its jurisdiction or control, of any cluster munition or submunition; and

   (e) ensure that any transfer of cluster munitions takes place in full compliance, by both the transferring and the recipient State, with the relevant prohibitions or restrictions of this Protocol.

5. This Article does not apply to transfers for the purpose of destruction, retrofitting in order to comply with the standards described in Technical Annex B, development of training in detection and clearance, or for the development of cluster munitions countermeasures.

Article 8
Clearance and destruction of cluster munition remnants

1. Each High Contracting Party and party to an armed conflict shall bear the responsibilities set out in this Article with respect to all cluster munition remnants in territory under its control. In cases where a user of cluster munitions which have become cluster munition remnants does not exercise control of the territory, the user shall, after the cessation of active hostilities, provide where feasible, inter alia technical, financial, material or human resources assistance, bilaterally or through a mutually agreed third party,
including inter alia, through the United Nations system or other relevant organizations, to facilitate the marking and clearance, removal or destruction of such cluster munition remnants.

2. After the cessation of active hostilities and as soon as feasible, each High Contracting Party and party to an armed conflict shall mark and clear, remove or destroy cluster munition remnants in affected territories under its control. Clearance and destruction of such cluster munitions remnants shall be completed as soon as feasible but no later than 10 years after the cessation of active hostilities. Areas affected by cluster munition remnants which are assessed pursuant to paragraph 4 of this Article as posing a serious humanitarian risk shall be accorded priority status for clearance, removal or destruction.

3. Where cluster munition remnants are located in territories under the control of a High Contracting Party and party to an armed conflict at the time of entry into force of this protocol for it, that party shall mark and clear, remove or destroy all such cluster munitions remnants as soon as feasible and to the extent possible within 10 years after the entry into force of the Protocol for it.

4. As soon as feasible after the cessation of active hostilities, or where applicable after entry into force of this protocol for it, each High Contracting Party and party to an armed conflict shall take the following measures in affected territories under its control, to reduce the risk posed by cluster munition remnants:
   (a) survey and assess the threat posed by cluster munition remnants;
   (b) assess and prioritise needs and practicability in terms of marking and clearance, removal or destruction taking into account the impact from other explosive remnants of war and landmines;
   (c) mark and clear, remove or destroy cluster munition remnants; and
   (d) take steps to mobilise resources to carry out these activities.

5. In conducting the above activities, the High Contracting Parties and parties to an armed conflict shall take into account international standards, including the International Mine Action Standards.

6. If a High Contracting Party believes that it will be unable to clear and destroy the cluster munition remnants referred to in paragraph 2 of this Article within that time period, it may submit to a Conference of High Contracting Parties a notification that it intends to extend the deadline for completing the clearance and destruction of such cluster munition remnants, by a period of up to five years. The Conference of High Contracting Parties shall consider the notification and may make recommendations to the High Contracting Party.

7. Each notification shall contain:
   (a) the duration of the intended extension;
   (b) an explanation of the reasons for the intended extension;
   (c) the humanitarian, social, economic and environmental implications of the intended extension; and
   (d) any other information relevant to the notification of the intended extension.

8. Such an extension may be renewed upon the submission of a new notification in accordance with paragraphs 6 and 7 of this Article. In submitting a further notification of intended extension, a High Contracting Party shall submit relevant additional information on what has been undertaken in the previous extension period pursuant to this Article.
Article 9
Recording, retaining and transmission of information

1. High Contracting Parties and parties to an armed conflict shall to the maximum extent possible and as far as practicable record and retain information on the use or abandonment of cluster munitions, to facilitate the rapid marking and clearance, removal or destruction of cluster munition remnants, risk education and the provision of relevant information to the party in control of the territory and to civilian populations in that territory.

2. High Contracting Parties and parties to an armed conflict which have used or abandoned cluster munitions which may become cluster munition remnants shall, without delay after the cessation of active hostilities and as far as practicable, subject to these parties’ legitimate security interests, make available such information to the party or parties in control of the affected area, bilaterally or through the United Nations or another mutually agreed third party or, upon request, to other relevant organizations which the party providing the information is satisfied are or will be undertaking risk education and the marking and clearance, removal or destruction of cluster munition remnants in the affected area.

Article 10
Protection of humanitarian missions and organizations from the effects of cluster munitions

1. Each High Contracting Party and party to an armed conflict shall:

(a) protect, as far as feasible, from the effects of cluster munition remnants, humanitarian missions and organizations that are or will be operating in the territory under the control of the High Contracting Party or party to an armed conflict and with that party’s consent; and

(b) upon request by such a humanitarian mission or organization, provide, as far as feasible, information on the location of all cluster munition contaminated areas that it is aware of in territory where the requesting humanitarian mission or organization will operate or is operating.

2. The provisions of this Article are without prejudice to existing International Humanitarian Law or other international instruments as applicable or decisions by the Security Council of the United Nations which provide for a higher level of protection.

Article 11
Victim assistance

1. High Contracting Parties and parties to an armed conflict shall, in accordance with domestic laws and procedures, as well as their obligations under applicable international law provide or facilitate the provision of appropriate and adequate assistance, including medical care, rehabilitation and psychological support and assistance for social and economic inclusion to cluster munition victims in territories under their jurisdiction or control. Each High Contracting Party and party to the armed conflict shall make every effort to collect reliable data with respect to cluster munition victims.

2. High Contracting Parties and parties to an armed conflict shall not discriminate against or among cluster munition victims, or between cluster munition victims and other victims of armed conflict or explosive remnants of war. Differences in treatment between such victims with disabilities and other persons with disabilities should be based only on medical, rehabilitative, psychological or socio-economic needs, taking into account age and gender sensitivities.
3. In order to fulfill its obligations under this Article, each High Contracting Party shall take, among others, the following measures, as appropriate:

(a) assess the needs of cluster munition victims;
(b) develop, implement and enforce national laws and policies;
(c) develop, where it does not already exist, in accordance with national procedures, a national plan, with provision of adequate assistance, including timeframes to carry these activities, with a view to incorporating them within applicable national health, disability, development and human rights frameworks and mechanisms, while respecting the specific role and contribution of relevant actors in the field of assistance and rehabilitation of victims of cluster munitions;
(d) seek to mobilize national and international resources;
(e) closely consult with and involve cluster munition victims and their representative organizations;
(f) designate, in accordance with national procedures, a focal point within the government for coordination of matters relating to the implementation of this Article; and
(g) strive to incorporate relevant guidelines and good practices including in the areas of medical care, rehabilitation and psychological support, as well as social and economic inclusion.

Article 12
Co-operation and assistance

1. In fulfilling its obligations under this Protocol, each High Contracting Party has the right to seek and receive assistance and each High Contracting Party in a position to do so shall provide such assistance in accordance with the provisions of this Article.

2. Each High Contracting Party in a position to do so shall provide assistance for the marking and clearance, removal or destruction of cluster munition remnants, and for risk education to civilian populations and related activities inter alia through the United Nations system, other relevant international, regional or national organizations or institutions, the International Committee of the Red Cross, national Red Cross and Red Crescent societies and their International Federation, non-governmental organizations, or on a bilateral basis.

3. Each High Contracting Party in a position to do so shall provide assistance, including to develop national capacities, for the care and rehabilitation and social and economic reintegration of victims of cluster munitions and cluster munition remnants. Such assistance may be provided inter alia through the United Nations system, relevant international, regional or national organizations or institutions, the International Committee of the Red Cross, national Red Cross and Red Crescent societies and their International Federation, non-governmental organizations, or on a bilateral basis.

4. Where, after entry into force of this Protocol, cluster munitions have become cluster munition remnants located in areas under the jurisdiction or control of a High Contracting Party, each High Contracting Party in a position to do so shall urgently provide emergency assistance to the affected High Contracting Party.

5. Each High Contracting Party in a position to do so shall contribute to trust funds within the United Nations system, other relevant trust funds, or by other means, to facilitate the provision of assistance under this Protocol.

6. Each High Contracting Party shall have the right to participate in the fullest possible exchange of equipment, material, services and scientific and technological information other than weapons related technology, necessary for the implementation of this Protocol.
High Contracting Parties undertake to facilitate such exchanges in accordance with national legislation and shall not impose undue restrictions on the provision of and receipt of clearance equipment and related technological information for humanitarian purposes.

7. Each High Contracting Party in a position to do so shall facilitate the development and use of technology and equipment for the detection and clearance of cluster munition remnants, including as appropriate through the use of trust funds established for that purpose or other means, in order to reduce the humanitarian impact of cluster munitions and cluster munition remnants.

8. Each High Contracting Party that seeks and receives assistance shall take all appropriate measures in order to facilitate the timely and effective implementation of this Protocol, in particular its humanitarian objectives, including through the timely collection and release of relevant data and information, and the facilitation of the entry and exit of assistance-related personnel, material and equipment, in a manner consistent with national laws and regulations, taking into consideration international best practices.

9. Each High Contracting Party undertakes to provide information to the relevant databases on mine action established within the United Nations system, especially information concerning various means and technologies of clearance of cluster munition remnants, lists of experts, expert agencies or national points of contact on clearance of cluster munition remnants and, on a voluntary basis, technical information on relevant types of explosive ordnance.

10. High Contracting Parties may submit requests for assistance substantiated by relevant information to the United Nations, to other appropriate bodies or to other States. These requests may be submitted to the Secretary-General of the United Nations, who shall transmit them to all High Contracting Parties and to relevant international organizations and non-governmental organizations.

11. In implementing the provisions of this Article, High Contracting Parties shall make use of, where appropriate, existing mechanisms, tools and databases within the framework of the Convention and other relevant instruments and mechanisms.

12. In the case of requests to the United Nations, the Secretary-General of the United Nations, within the resources available to the Secretary-General of the United Nations, may take appropriate steps to assess the situation and in co-operation with the requesting High Contracting Party and other High Contracting Parties, recommend the appropriate provision of assistance. The Secretary-General may also report to High Contracting Parties on any such assessment as well as on the type and scope of assistance required, including possible contributions from the trust funds established within the United Nations system.

13. High Contracting Parties in a position to provide assistance shall, where appropriate, cooperate to develop coordinated strategies for the effective and efficient provision of assistance.

Article 13
Consultations of High Contracting Parties

1. The High Contracting Parties undertake to consult and co-operate with each other on all issues related to the operation of this Protocol and on additional steps for achieving the objectives set out in the Preamble to this Protocol. For this purpose, a Conference of High Contracting Parties shall be held as agreed to by a majority, but no less than eighteen High Contracting Parties.

2. Conferences of High Contracting Parties shall:

(a) review the status and operation of this Protocol;
(b) consider matters pertaining to cooperation and assistance and national implementation of this Protocol, including annual national reporting; and

(c) prepare for review conferences; and

(d) consider other relevant matters.

3. During the conferences referred to in paragraph 3 of Article 8 of the Convention following the entry into force of this Protocol, the High Contracting Parties shall:

(a) review the Technical Annexes of this Protocol and consider whether any amendments to them should be made, in order to further minimise the humanitarian impact of cluster munitions; and

(b) endeavour to agree on comprehensive provisions regarding the use, stockpiling, production and transfer of cluster munitions, as well as the completion of destruction of cluster munitions.

4. The High Contracting Parties shall provide annual reports on the implementation of this Protocol to the Secretary-General of the United Nations, who shall circulate them to all High Contracting Parties, including on the following matters:

(a) dissemination of information on this Protocol to their armed forces and relevant agencies or departments and to the civilian population;

(b) stockpile surveillance and management programmes for storage of cluster munitions described in Technical Annex B in accordance with sub-paragraph 1 (c) of Article 6;

(c) cluster munitions that do not meet the standards described in Technical Annex B, other than those subject to a deferral period under this Protocol;

(d) destruction of cluster munitions under its jurisdiction and control other than those described in Technical Annex B:

(i) the status and progress of the destruction of cluster munitions in accordance with sub-paragraph 1 (b) of Article 6; and

(ii) the comprehensive plan referred to in paragraph 2 of Article 6;

(e) cluster munitions retained in accordance with paragraph 2 of Article 4 and paragraph 7 of Article 5;

(f) activities on clearance and destruction of cluster munitions remnants;

(g) victim assistance;

(h) international cooperation and assistance;

(i) legislation related to this Protocol; and

(j) other relevant matters.

5. A High Contracting Party which has availed itself of a deferral period referred to in this Protocol shall provide additional information in its annual reports on the implementation of the applicable Article during that deferral period.

6. The costs of the Conferences of High Contracting Parties shall be borne by the High Contracting Parties and States not parties participating in the Conference, in accordance with the United Nations scale of assessment adjusted appropriately.
Article 14
Compliance

1. Each High Contracting Party shall take all appropriate steps, including legislative and other measures, to prevent and suppress violations of this protocol by persons or on territory under its jurisdiction or control.

2. The measures envisaged in paragraph 1 of this Article include appropriate measures to ensure the imposition of penal sanctions against persons who, in relation to an armed conflict and contrary to the provisions of this Protocol, wilfully kill or cause serious injury to civilians and to bring such persons to justice.

3. Each High Contracting Party shall require that its armed forces and relevant agencies, departments or ministries issue appropriate instructions and operating procedures and that its personnel receive training commensurate with their duties and responsibilities to comply with the provisions of this Protocol.

4. The High Contracting Parties undertake to consult each other and to cooperate with each other bilaterally, through the Secretary-General of the United Nations or through other appropriate international procedures, to resolve any problems that may arise with regard to the interpretation and application of the provisions of this Protocol.
Technical Annex A

The Protocol shall not apply to the following munitions:

1. A munition or submunition designed to dispense flares, smoke, pyrotechnics, or chaff;

2. A munition or explosive submunition designed exclusively to engage aircraft, missiles or unmanned aerial vehicles while in flight;

3. A munition or submunition designed to produce electrical or electronic effects;

4. A munition that has all of the following characteristics:
   (a) each munition contains fewer than ten explosive submunitions;
   (b) each explosive submunition weighs more than four kilograms;
   (c) each explosive submunition is designed to detect and engage a single target object;
   (d) each explosive submunition is equipped with an electronic self-destruction mechanism;
   (e) each explosive submunition is equipped with an electronic self-deactivating feature.

5. A cluster munition that incorporates a mechanism or design which, after dispersal, results in no more than 1% unexploded ordnance across the range of intended operational environments.
Technical Annex B

The following cluster munitions are not subject to the prohibitions in paragraphs 1 and 2 of Article 5 of this Protocol:

1. A cluster munition whose explosive submunitions possess at least one of the following safeguards that effectively ensure that unexploded submunitions will no longer function as explosive submunitions:
   (a) a self-destruction mechanism or a self-neutralisation mechanism;
   (b) a self-deactivating feature; or
   (c) two or more initiating mechanisms, at least one of which functions as a self-destruction mechanism.
2. A cluster munition that is designed exclusively to engage ships that are at sea;
3. A cluster munition that is designed exclusively to be fired along a line of sight and to engage single target objects, and disperses or releases fewer than 10 explosive submunitions;
4. A cluster munition that disperses or releases explosive submunitions each of which weighs more than five kilograms, and is designed exclusively as an anti-runway munition against hard-surfaced runways, constructed from mass concrete, reinforced concrete, asphalt or a combination of these, or from an equivalent material which yields the same compressive strength.