



Exploration & Production

GENERAL SPECIFICATION

CIVIL WORKS

GS EP CIV 204

Design of airports and helicopters areas

02	10/05	Addition of "EP" root to GS identification
01	09/03	Change of Group name and logo
00	01/01	First issue
Rev.	Date	Notes

Contents

1. Scope	4
2. Reference documents.....	4
3. General.....	7
3.1 Applicable areas	7
4. Needs to be satisfied	8
4.1 Local airports	8
4.2 Forecast airport traffic.....	8
4.3 Characteristics and reference codes of airport.....	8
5. Selection of aeronautical site.....	9
5.1 General characteristics of installation site	9
5.2 Selection of site	9
5.3 Arrangement	9
6. General layout	11
6.1 Runway.....	11
6.2 Taxiways.....	11
6.3 Traffic area.....	12
6.4 Helicopters areas.....	12
6.5 Area reserved for aircraft services.....	13
6.6 Supplementary traffic.....	13
6.7 Road access	13
6.8 Accommodation and living quarters.....	13
6.9 Communication centres	13
6.10 Right of way and boundary fence	13
6.11 Safety.....	13
7. Aeronautical infrastructure	13
7.1 Topographical survey of site installation area.....	13
7.2 Geological and geotechnical survey	13
7.3 Investigation for natural materials to be used in construction.....	14
7.4 Design of pavements	14



7.5	Drainage of surface and shallow water.....	14
7.6	Earthworks.....	14
7.7	Aeronautical pavements	14
7.8	Airfield markings and aids.....	15
7.9	Radio electrical aids.....	15
8.	Installations	15
9.	Financial and economical project aspects	16
9.1	Detailed investment evaluation.....	16
9.2	Airport operation	16

1. Scope

The specification covers airports and helicopter areas to be used by the COMPANY.

All the works concerned by this specification are subject to the general contract conditions.

The specification stipulates what the COMPANY considers as an acceptable minimum.

However, the COMPANY may consider that certain aspects of the studies may be of a particular nature.

In this case the COMPANY reserves the right to make supplementary requirements.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

When local national standards, regulations and codes exist, all design, engineering, materials and construction shall conform to their latest requirements, which complete or modify the present specifications.

In case of lack of obligatory local national standards, international norms and standards will be applied.

In case of lack of international norms and standards, national norms and standards listed hereafter will be applied.

In all cases the system adopted shall be coherent, i.e. the various texts shall present no incompatibility. Any dispute shall be resolved by basing works on the most stringent text for the CONTRACTOR and at his expense.

The list of specifications and norms quoted is not exhaustive: the CONTRACTOR shall respect the secondary standards and regulations, which cover the works described in the present specification.

Certain specifications and norms may be indicated with an issue date. This is for information only and on the understanding that the most recent issue shall be used.

Standards

American standards and codes

Reference	Title
ASTM D1195 - 93 (1997)	Test Method for Repetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements
ASTM D1196 - 93 (1997)	Test Method for Nonrepetitive Static Plate Load Tests of Soils and Flexible Pavement Components, for Use in Evaluation and Design of Airport and Highway Pavements
ASTM D2940 - 98	Specification for Graded Aggregate Material for Bases or Subbases for Highways and Airports
ASTM D5340 - 98	Test Method for Airport Pavement Condition Index Surveys

Reference	Title
ASTM F758 - 95	Specification for Smooth-Wall Poly (Vinyl Chloride)(PVC) Plastic Underdrain Systems for Highway, Airport and Similar Drainage
ACI 325.5R - 90	Design of Continuously Reinforced Pavement for Airports

English standards and codes

Reference	Title
BS6100- 2.4.3: 1992	Glossary of building and civil engineering terms. Civil engineering. Highway, railway and airport engineering. Airport engineering
BS6213: 1982	Guide to selection of constructional sealants
BS7941-1: 1999	Methods for measuring the skid resistance of pavements surfaces. Side-way force coefficient routine investigation machine
BS7941-2: 2000	Methods for measuring the skid resistance of pavements surfaces. Test method for measurement of surface skid resistance using the Grip Tester braked wheel fixed slip device
BS3224-1: 1988	Lighting fittings for civil land aerodromes. Specification for lighting units for use in precision approach path indicator systems
BS3224-4: 1988	Lighting fittings for civil land aerodromes. Specification for elevated lighting units
BS3224-5: 1988	Lighting fittings for civil land aerodromes. Specification for inset lighting units
BS3224-6: 1988	Lighting fittings for civil land aerodromes. Specification for obstacle lighting units

Professional Documents

International Conventions and Agreements

Reference	Title
ICAO	Convention on International Civil Aviation and related acts Annex 10: Aeronautical Telecommunications Annex 14: Aerodromes Annex 16: Environmental Protection

International technical publications

Reference	Title
ICAO	Aerodrome Design Manual (Doc 9157) Airport Planning Manual (Doc 9184)

Reference	Title
ICAO	Airport Services Manual (Doc 9137) Heliport Manual (Doc 9261) Manual of the Aeronautical Telecommunication Network (Doc 9578)

French documents

Reference	Title
ITAC	Chapitre 2: Classification des aérodromes, 1998 (Chapter 2: Classification of aerodromes) Chapitre 3: Aire de manœuvre, 1998 (Chapter 3: Manoeuvring area) Chapitre 4: Aire de trafic, 1998 (Chapter 4: Traffic area) Chapitre 5: Conception des chaussées aéronautiques, 1999 (Chapter 5: Design of aeronautical pavements) Chapitre 6: Construction des chaussées aéronautiques, 1999 (Chapter 6: Construction of aeronautical pavements) Chapitre 7: Suivi et auscultation des chaussées aéronautiques, 1999 (Chapter 7: Survey of aeronautical pavements) Chapitre 8: Gestion des chaussées aéronautiques - Méthode ACN-PCN, 1999 (Chapter 8: Management of aeronautical pavements) Chapitre 12: Dégagements aéronautiques, 2001 (Chapter 12: Aeronautical clearances) Chapitre 13: Aérodromes à caractéristiques spéciales, 2000 (Chapter 13: Aerodromes with special characteristics)
STBA STBA - LCPC	Guide du bruit aéronautique - 1987 (Aeronautic noise guide) Chaussées aéronautiques en béton hydraulique. Guide technique, 2000 (Airports pavements in concrete - Technical guide)

American documents

Reference	Title
Asphalt Institute MS11 NFPA 415-1977	Thickness design - Asphalt pavements for Air Carrier Airports Standard on Airport terminal Building, Fuelling Ramp Drainage and Loading Walkways