

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | <ul style="list-style-type: none"> .1 American Bearing Manufacturers Association (ABMA). .2 Air Movement and Control Association (AMCA.) <ul style="list-style-type: none"> .1 AMCA Publication 99, Standards Handbook (Revised 2003). .2 AMCA 300, Reverberant Room Method for Sound Testing of Fans. .3 AMCA 301, Methods for Calculating Fan Sound Ratings from Laboratory Test Data. .3 American National Standards Institute (ANSI): <ul style="list-style-type: none"> .1 ANSI/AMCA 210, Laboratory Methods of Testing Fans for Aerodynamic Performance Rating. .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS): <ul style="list-style-type: none"> .1 Material Safety Data Sheets (MSDS). |
| <u>1.2 SYSTEM DESCRIPTION</u> | <ul style="list-style-type: none"> .1 Performance Requirements: <ul style="list-style-type: none"> .1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards in force. Provide confirmation of testing. .2 Capacity: flow rate, total static pressure Pa, r/min, bhp W, model and size and sound ratings as indicated on schedule. .2 Statically and dynamically balanced. Constructed to AMCA 99. .3 Sound ratings: comply with AMCA 301, tested to AMCA 300. Unit shall bear AMCA certified sound rating seal. .4 Performance ratings: based on tests performed in accordance with ANSI/AMCA 210, unit to bear AMCA certified rating seal. |

1.2 SYSTEM DESCRIPTION (Cont'd)	.5	Bearings: sealed lifetime oilite ball bearings, heavy duty grease lubricated ball or roller bearings of self aligning type with oil retaining, dust excluding seals and a certified minimum rated L10 life of 100,000 hours.
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1.3 SUBMITTALS	.1	Product Data: .1 Submit manufacturer's printed product literature, specifications and datasheet in accordance with Section 01 33 00 - Submittal Procedures. Include product characteristics, performance criteria, and limitations. .1 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures.
	.2	Shop Drawings: .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures. .1 Include: .1 Fan performance curves showing specified point of operation. .2 Sound rating data. .3 Installation procedures.
	.3	Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures. .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties. .2 Instructions: submit manufacturer's installation instructions.
	.4	Closeout Submittals: .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 QUALITY ASSURANCE .1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06- Health and Safety Requirements.

1.5 DELIVERY, STORAGE AND HANDLING .1 Packing, shipping, handling and unloading:
.1 Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements.
.2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
.2 Waste Management and Disposal:
.1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 MAINTENANCE .1 Extra Materials:
.1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
.2 Furnish list of individual manufacturer's recommended spare parts for equipment, include:
.1 Bearings and seals.
.2 Belts.
.3 Addresses of suppliers.
.4 List of specialized tools necessary for adjusting, repairing or replacing.

PART 2 - PRODUCTS

- 2.1 FANS - GENERAL
- .1 Capacity: flow rate, static pressure Pa, r/min, bhp, model and size and sound ratings as indicated on schedule.
 - .2 Statically and dynamically balanced. Constructed in conformity with AMCA 99.
 - .3 Sound ratings: comply with AMCA 301, tested to AMCA 300.
 - .4 Performance ratings: based on tests performed in accordance with ANSI/ASHRAE 51/AMCA 210.
 - .5 Bearings: sealed lifetime ball bearings or heavy duty grease lubricated ball or roller bearings of self aligning type with oil retaining, dust excluding seals and a certified minimum rated life to ABMA L10 of 100,000 h.
- 2.2 WALL EXHAUSTERS
- .1 Centrifugal backward inclined fan units, V belt or direct driven.
 - .1 Spun aluminum housings, complete with resilient mounted motor and fan.
 - .2 12 mm mesh 2.0 mm dia galvanized birdscreen.
 - .3 Motorized gasketted insulation aluminum back draft dampers to Section 23 33 15 - Dampers - Operating.
 - .4 NEMA-1 weatherproof disconnect switch within fan housing.
 - .5 Stainless steel securing bolts and screws.
 - .2 Housings:
 - .1 Provide with rubber or neoprene grommets for wiring passages, integral attachment collar, or angle ring mounted to mating flanged wall sleeve with full gasketting.
 - .2 Discharge pattern: away from building.
 - .3 Acceptable Product: Greenheck, Penn, Carnes, Cook, ACME.
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PART 3 - EXECUTION

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| <u>3.1 MANUFACTURER'S INSTRUCTIONS</u> | .1 | Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet. |
| <u>3.2 INSTALLATION</u> | .1 | Install in accordance with manufacturer's instructions. |
| | .2 | Install fans for grease exhaust fans in accordance with NFPA 96. |
| <u>3.3 CLEANING</u> | .1 | Proceed in accordance with Section 01 74 11 - Cleaning. |
| | .2 | Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment. |
| <u>3.4 COMMISSIONING</u> | .1 | Commissioning in accordance with Section 01 91 13 - General Commissioning (Cx) Requirements. |